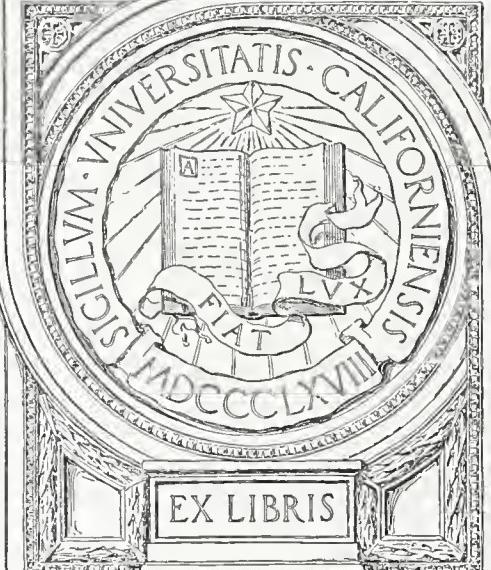




UNIVERSITY OF CALIFORNIA  
SAN FRANCISCO MEDICAL CENTER  
LIBRARY



EX LIBRIS







Digitized by the Internet Archive  
in 2017 with funding from

The National Endowment for the Humanities and the Arcadia Fund

<https://archive.org/details/journalofarkansa64unse>



June, 1967

# THE JOURNAL OF THE *Arkansas* MEDICAL SOCIETY

Vol. 64 No. 1

FORT SMITH, ARKANSAS

Medical School Library  
University of California  
San Francisco, California 94122

PROCEEDINGS  
91st ANNUAL SESSION

## Something special Darvon® Compound-65

Each Pulvule® contains 65 mg. propoxyphene hydrochloride,  
227 mg. aspirin, 162 mg. phenacetin, and  
32.4 mg. caffeine.



Additional information available  
to the medical profession upon request.  
Eli Lilly and Company  
Indianapolis, Indiana 46206



220674

some allergens are green

whatever their color,  
shape, or size...

**Benadryl®**

(diphenhydramine hydrochloride)

PARKE-DAVIS

for control of  
allergic symptoms



Whether the allergen is greenish or garish, unseen or unknown, your patient can get symptomatic relief with BENADRYL—the potent antihistamine with antispasmodic action. *INDICATIONS:* Antihistaminic, anti-spasmodic, antitussive, and antiemetic therapy.

*PRECAUTIONS:* Persons who have become drowsy on this or other antihistamine-containing drugs, or whose tolerance is not known, should not drive vehicles or engage in other activities requiring keen response while using this product. Hypnotics, sedatives, or tranquilizers if used with diphenhydramine hydrochloride should be prescribed with caution because of possible additive effect. Diphenhydramine

has an atropine-like action which should be considered when prescribing diphenhydramine hydrochloride. *ADVERSE REACTIONS:* Side effects are generally mild and may affect the nervous, gastrointestinal, and cardiovascular systems. Drowsiness, dizziness, dryness of the mouth, nausea, nervousness, palpitation, blurring of vision, vertigo, headache, muscular aching, thickening of bronchial secretions, restlessness, and insomnia have been reported. Allergic reactions may occur.

BENADRYL is available in Kapsseals® of 50 mg. and Capsules of 25 mg.

00067

The pink capsule with the white band is a trademark of Parke, Davis & Company.

**PARKE-DAVIS**



■ to help restore and stabilize  
the intestinal flora

■ for fever blisters and canker  
sores of herpetic origin

LACTINEX contains both *Lactobacillus acidophilus* and *L. bulgaricus* in a standardized viable culture, with the naturally occurring metabolic products produced by these organisms.

First introduced to help restore the flora of the intestinal tract in infants and adults,<sup>1, 2, 3, 4</sup> LACTINEX has also been shown to be useful in the treatment of fever blisters and canker sores of herpetic origin.<sup>5, 6, 7, 8</sup>

No untoward side effects have been reported to date.

*Literature on indications and dosage available on request.*

*References:*

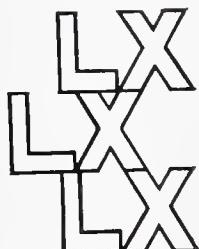
- (1) Siver, R. H.: CMD, 21:109, September 1954. (2) Frykman, H. H.: Minn. Med., 38:19-27, January 1955. (3) McGivney, J.: Tex. State Jour. Med., 51:16-18, January 1955. (4) Quehl, T. M.: Jour. of Florida Acad. Gen. Pract., 15:15-16, October 1965. (5) Weekes, D. J.: N.Y. State Jour. Med., 58:2672-2673, August 1958. (6) Weekes, D. J.: EENT Digest, 25:47-59, December 1963. (7) Abbott, P. L.: Jour. Oral Surg., Anes., & Hosp. Dental Serv., 310-312, July 1961. (8) Rapoport, L. and Levine, W. I.: Oral Surg., Oral Med. & Oral Path., 20:591-593, November 1965.

**HYNSON, WESTCOTT  
& DUNNING, INC.**



BALTIMORE, MARYLAND 21201

(LX04)



THE  
JOURNAL OF THE  
*Arkansas*  
MEDICAL SOCIETY

Owned by  
THE ARKANSAS MEDICAL SOCIETY  
And Published Under Direction of the Council

ALFRED KAHN, JR., M.D., Editor  
1300 West Sixth Street Little Rock, Arkansas  
MR. PAUL C. SCHAEFER, Business Manager  
218 Kelley Bldg. Fort Smith, Arkansas  
LITTLE ROCK BUSINESS OFFICE  
114 E. Second St. Little Rock, Arkansas

OFFICERS OF THE ARKANSAS MEDICAL SOCIETY  
JOSEPH A. NORTON, President ..... Little Rock  
H. W. THOMAS, President-Elect ..... Dermott  
JEROME LEVY, First Vice President ..... Little Rock  
DAVID H. PONTIUS, Second Vice President ..... West Memphis  
GEORGE F. WYNNE, Third Vice President ..... Warren  
ELVIN SHUFFIELD, Secretary ..... Little Rock  
W. R. BROOKSHER, Secretary Emeritus ..... Fort Smith  
BEN N. SALTZMAN, Treasurer ..... Mountain Home  
JOHN P. PRICE, Speaker, House of Delegates ..... Monticello  
AMAIL CHUDY, Vice Speaker,  
House of Delegates ..... North Little Rock  
ALFRED KAHN, JR., Journal Editor ..... Little Rock  
MR. PAUL C. SCHAEFER, Executive Vice President,  
P.O. Box 1208 ..... Fort Smith

COUNCILORS

First District	ELDON FAIRLEY	Osceola
	B. P. RANEY	Jonesboro
Second District	PAUL GRAY	Batesville
	HUGH R. EDWARDS	Searcy
Third District	PAUL MILLAR	Stuttgart
	L. J. P. BELL	Helena
Fourth District	T. E. TOWNSEND	Pine Bluff
	LEE B. PARKER	McGehee
Fifth District	KENNETH R. DUZAN	El Dorado
	PAUL SIZEMORE	Magnolia
Sixth District	KARLTON H. KEMP	Texarkana
	JOHN P. WOOD	Mena
Seventh District	JACK KENNEDY	Arkadelphia
	ROBERT F. McCRARY	Hot Springs
Eighth District	WILLIAM PAYTON KOLB	Little Rock
	JAMES R. MORRISON	Little Rock
Ninth District	STANLEY APPLEGATE	Springdale
	ROSS FOWLER	Harrison
Tenth District	C. C. LONG	Ozark
	A. S. KOENIG	Fort Smith

The Advertising policy of this JOURNAL is governed by the PRINCIPLES OF ADVERTISING of the State Medical Journal Advertising Bureau, Inc., by the Advertising Committee of the Bureau and by the Council of the Arkansas Medical Society.

EXCLUSIVE PUBLICATION—Articles are accepted for publication on the condition that they are contributed solely to this JOURNAL.

COPYRIGHT 1967—By the JOURNAL of the Arkansas Medical Society.

NEWS—Our readers are requested to send in items of news, also marked copies of newspapers containing matter of interest to the membership.

Proceedings 91st Annual Session ..... 1

FORUM FROM THE DEPT.  
OF OBGYN

Carcinoma of the Vagina Following  
Treatment of Carcinoma of  
Cervix ..... 46

Manis C. Edwards, M.D.

FEATURES

Arkansas Public Health at a Glance	50
Editorial	52
Medicine in the News	53
Tuberculosis Abstracts	55

Notice on Form 3579-P to be sent to Arkansas Medical Society, 218 Kelley Building, Fort Smith, Arkansas 72901. Published monthly under direction of the Council, Arkansas Medical Society, Vol. 64, No. 1. Subscriptions \$3.00 a year. Single copies 50 cents. Entered as second class matter, May 1, 1955, in the post office at Little Rock, Arkansas, under the Act of Congress of March, 1879. Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized August 1, 1918. Second-class postage paid at Little Rock, Arkansas.



JOSEPH A. NORTON, M.D.

Little Rock

President

ARKANSAS MEDICAL SOCIETY

1967-1968



**THE JOURNAL OF THE Arkansas MEDICAL SOCIETY**

PUBLISHED MONTHLY UNDER DIRECTION OF COUNCIL

VOLUME 64 • JUNE, 1967 • NUMBER 1

**PROCEEDINGS**  
*91st Annual Session*  
**ARKANSAS MEDICAL SOCIETY**

**Arlington Hotel, Hot Springs**

**April 30 - May 3, 1967**

**PRESIDENT'S ADDRESS**

L. A. Whittaker, M.D.

May 1, 1967

Mr. Speaker, Officers of the Medical Society, Distinguished Guests, Members of the State Medical Society, Members of the Auxiliary, and Ladies and Gentlemen:

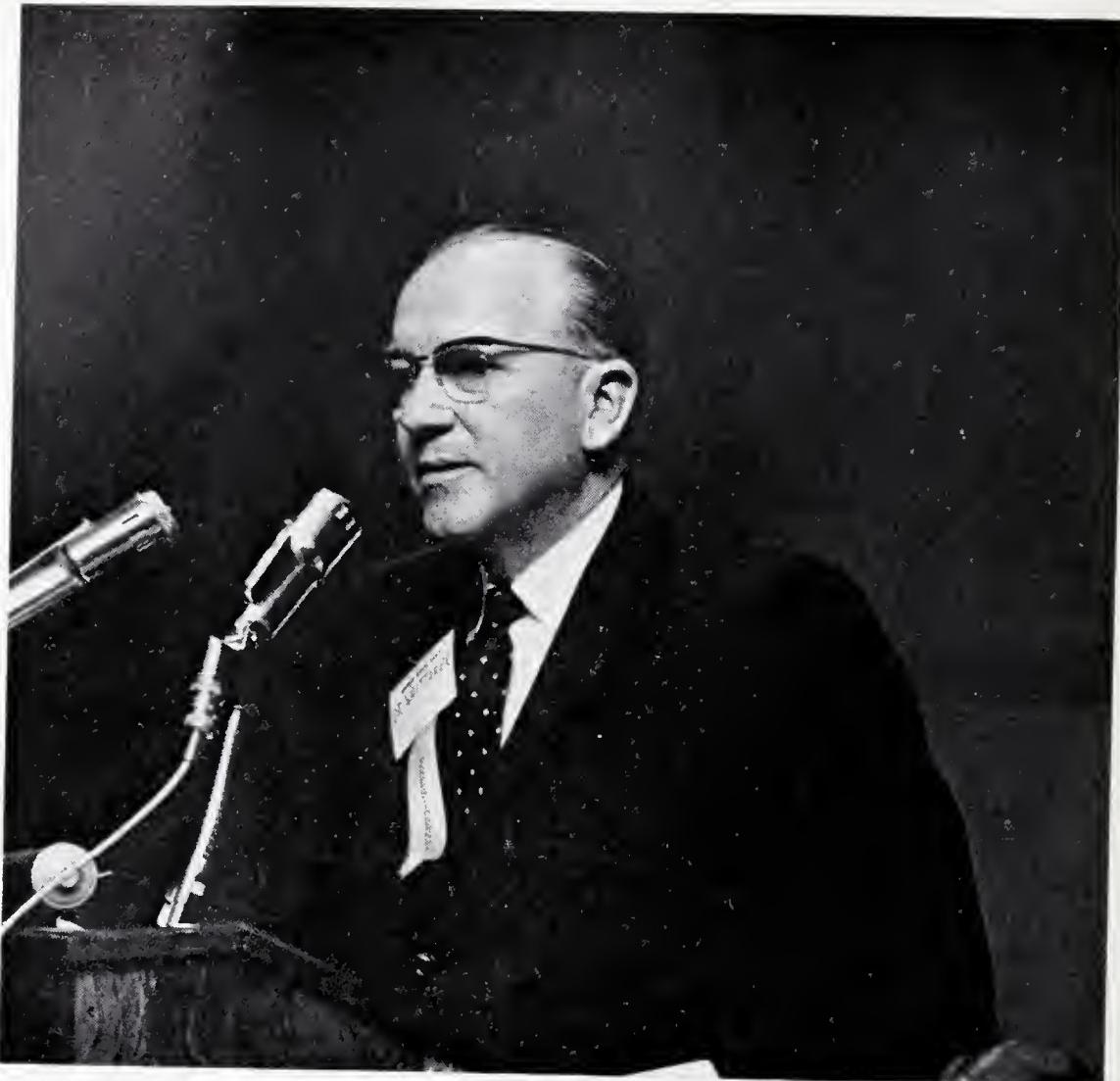
Another year has rolled around, and the changes that have taken place in medicine from a medical care point of view have been sweeping in their concept, universal in their application, and at times, most annoying to all of us. When one contemplates the changes that have taken place, the number is staggering. Public Law 89-97, or Medicare, with its two Titles 18 and 19, has been the largest and most encompassing, but by no means the only change that has taken place. If you will stop and think for a moment, there are at least 14 government agencies operating in our state at the present time that have some voice in the control of, and paying for, medical care for all types of people in all walks of life. There is no facet of life, and no practice of medicine that has not been touched or engulfed by these programs that are foisted on our backs by the bureaucratic do-gooders who believe that government can dictate the practice of medicine better than the doctors and the paramedical personnel who must, and do, provide the services in taking care of the people of our state.

Then, let me sound a note of warning. "Be-

ware the welfare horse." We must not be afraid to look a gift horse in the mouth. It is my contention that the overwhelming force and the multiplicity of the government programs offered have modified, changed, and many times confused the issues at hand. I believe it is time for us to consolidate our forces, to shake off the confusion, and to take a renewed interest in the activities regarding these government controls. I believe that the strategy of the government, particularly the federal government, is to divide and conquer us. This technique is nothing new. It has been used by dictators down through the years, and I must say, most successfully.

In our own state, the Welfare Department, for example, has made separate contracts with different specialty groups and with the dentists to supply services to welfare recipients. In the past year, we have gradually awakened to the fact that all government agencies are beginning to tell us where we can practice, on whom we may practice, and what compensation we may receive for these services.

When Public Law 89-97 was in the Congress, attempts were made to specify the grade of physician that may practice, so that if they had been able to specify that only Board certified physicians may take care of these government wards, many physi-



L. A. Whittaker, Fort Smith, makes his address as president of the Arkansas Medical Society, May 1, 1967, Arlington Hotel.

cians quite competent and very conscientious would be denied the opportunity to provide medical services for the people under Medicare. I can only see this as another "divide and conquer" technique in which physicians are divided amongst themselves, as to whom they should serve.

At last, we have become aware of the sleeper in the Medicare Act, and that is Title 19. Title 19 has been implemented by 26 states in our country. To this date, Arkansas has not been able to implement Title 19. The staggering cost that Title 19 has saddled our government with, has given our legislators second thoughts. The probability is that in the immediate future, Title 19 will be modified in some manner or means in Congress. Our own state, at the present time, apparently is unable to provide the special matching funds that would implement Title 19 in Arkansas.

What can we do about this appalling situation that has engulfed us all? I would say that unity is the key word, and should be the driving force to bind us together so that we may offset the evils inherent in government control of medical care. I believe that in the past year, many people have become aware of the strangling effect of government control, this control brought about by our representatives in Congress, and I believe that the message to us should be—take an interest in politics, both on a local as well as a state and national level. It appears to me that until we take an interest in those who are elected, support the ones who have a conservative outlook, and attempt to defeat those who have way-out leanings, then we may be able to bring about the changes that would be desirable to us.

Unity can be achieved at home. Take an interest in your County Medical Society. A great deal of information is available through our state

Medical Journal, and through the mailings that come from our home office.

Free discussion should be encouraged. Let every man have his say, and when the opinions are boiled down, with a little give and a little take, your delegates to the House of Delegates can be instructed to carry out the wishes of those of you in your own county Medical Society. Volunteer for committee work. If you do volunteer, or are elected to a committee, please make every attempt to carry out the duties of that job. In our democratic system, the framework of the Medical Society is based on committee action, and the opinions that they express are generally the ones that are carried out in the House of Delegates. If we fail to take in consideration all the facets involved in any problem, if we fail to freely discuss these problems, and arrive at a solution, and if we fail to send the solution to our House of Delegates, then we have lost the opportunity of unity and strength that can be ours.

What has been done during the past year? As your President, it has been my privilege to travel to a number of meetings both in Chicago and Washington at which members from other state county medical societies were represented, where their opinions were voiced, their objections were vocalized, and the wisdom of their thinking was taken into consideration in making the final ac-

tion on the decisions that both the AMA and the Arkansas Medical Society have made.

A number of other members of the Medical Society have been sent to similar meetings throughout the country, and the information that they return with provides us with a guide for making the decisions that are required to steer the course of the Medical Society.

One of our most valuable activities has been to provide the state Legislature with a doctor's room. Physicians of the state have been particularly generous in providing voluntary time, serving a day at a time, in this doctor's room, and I think it has been a very valuable lesson to them to see the Legislature in action. The activities and the services that they have provided our legislators carry a great deal of weight in impressing the legislators that we are not entirely without feeling, and that we are not as mean as some people would have us be.

We had a mid-winter meeting of the House of Delegates in December of 1966 which was well attended, and the program presented provided a great deal of educational information to many members in our state, and particularly was that true of the change in attitude of the treatment of pulmonary tuberculosis.

A statement of policy was promulgated in regard to the guidance of Public Law 89-97, and



The Tenth Councilor District Medical Society and its Auxiliary acted as hosts at the Monday evening Cocktail Party in the Arlington Hotel Ballroom honoring officers of the Society and Auxiliary.



At the cocktail party on Monday evening in the Arlington Hotel Ballroom, President Whittaker talks with representatives of the Arkansas State Medical Assistants Society who manned the coffee bar (foreground).

accurate and concise information was provided each member of the Medical Society so that the mechanical workings of Public Law 89-97 might be better understood.

Your Executive Committee of the Council has instituted a series of monthly meetings with the Welfare Department. These meetings began in November, 1966, and have been held at monthly intervals since that time, and we were able to convince the past commissioner that the doctors of the state are entitled to usual and customary fees in caring for welfare clients. However, to the present date, we have not been able to convince the Governor, nor the Legislature, that this fee schedule is possible and should be carried out. It is the intent of the Executive Committee to continue these negotiations, and perhaps they will bear fruit in the near future.

Your Medical Society has renegotiated contracts with the Military Dependents' Medicare Program, which now has been enlarged to include the retirees and their dependents. Your Medical Society, through its Legislative Committee, has guided, to some extent at least, the course of many bills in the last legislative session, and they were able to bring about the defeat of several undesirable bits of legislation and to assist the passage of

several desirable pieces of legislation.

This has not been an idle year for your officers, Executive Committee, and the Council. They have had regular meetings throughout the year in which their wisdom and their experience and their desires were carefully measured and carefully weighed, so that the wishes of the entire medical society could be granted as far as possible. It has also been an inspiring year for me to meet and learn more about the Medical Society, to make new friends, and perhaps some enemies, and I think that I, in particular, and all of us in general, are indebted to the tireless work of the many committees, both standing and special, that have worked so hard and so long for all of us throughout the last year.

In particular, I would like to commend our Legislative Committee and its chairman, Dr. Elvin Shuffield, who has spent long hours and a great deal of time and effort in keeping up with the activities of the Legislature.

I would also like to thank Dr. A. S. (Bud) Koenig, chairman of the Program Committee, and Dr. Cliff Long and his Fee Committees that have worked so arduously towards contracts with the federal government. I would like to thank Dr. Harley Darnall and his Sub-Committee on Tuber-

## PROCEEDINGS

crosis for the great deal of work they have done towards the policy of treatment of tuberculosis in our state. Dr. Richard Logue, chairman of the Professional Relations Committee of the Eighth Councilor District, in Little Rock, has adjudicated a great many difficult Medicare cases and deserves our special appreciation. I think our Executive Vice-President, Mr. Paul Schaefer, deserves particular attention and particular praise for the work that he does and has done for the past year. He has always been available. He has always had a cheerful outlook, and has uncomplainingly carried out the activities of the Council, the requests of the President, and has been available for all the meetings and all the travel, all the heartbreak that has gone in seeing failure develop when victory seemed to be within our grasp. And, along with Mr. Schaefer, I would particularly like to thank Miss Leah Richmond for her untiring efforts, and they certainly are untiring,

and her staff, who do the work—the typing, listen to the gripes of many doctors who are dissatisfied with the activities of the Medical Society. To her and Mr. Schaefer, I think we all owe a special thanks. I would be remiss if I ignored the Auxiliary. This year, Mrs. John McCullough Smith has been the President, and her work and activities have certainly been monumental. She has traveled over the entire state, and through her actions and her committees, the Auxiliary has certainly done a magnificent job in assisting the Medical Society in its activities.

Dr. Omer Bradsher has toiled long and late to reorganize Ark-Pac and he needs your continued support.

Thank you for allowing me to be your President for the past year. If we can work together, plan together, and support our Medical Society, then our President-Elect, Joe Norton, will have a productive year.



The cocktail party on Monday evening honoring Society and Auxiliary Officers.

Remember — a government strong enough to give you everything you want, is powerful enough to take away everything you have.

### FIRST MEETING HOUSE OF DELEGATES

Speaker J. P. Price called the meeting to order in Room "C" of the Arlington Hotel at 1:00 P.M. on Sunday, April 30, 1967, and called on Councilor W. Payton Kolb for the invocation.

The Executive Vice President, Mr. Schaefer, called the roll of delegates. The following delegates, officers, and members seated as delegates by action of the House were present: ARKANSAS, R. H. Whitehead; ASHLEY, E. C. Gresham; BAXTER, John F. Guenthner; BENTON, Harry White; BOONE, G. Allen Robinson; BRADLEY, George F. Wynne; CHICOT, H. W. Thomas; CLARK, Herman D. Luck; CRAIGHEAD-POINSETT, John Kirkley; CRAWFORD, Jack N. Thicksten; CRITTENDEN, David H. Pontius; DALLAS, Don G. Howard; DESHA, Guy U. Robinson; DREW, Paul A. Wallack; FAULKNER, C. A. Archer; FRANK-

LIN, David L. Gibbons; GARLAND, M. R. Springer, Jr., Cecil Parkerson, John Trieschmann; GRANT, Clyde Paulk; GREENE-CLAY, O. E. Bradsher; HEMPSTEAD, C. Lynn Harris; HOT SPRING, John W. Cole; INDEPENDENCE, Jim E. Lytle; JEFFERSON, H. A. Crane, Jr., R. F. Bryant; JOHNSON, James M. Kolb, Sr.; LEE, Dwight W. Gray; LITTLE RIVER, James D. Armstrong; LOGAN, Charles Chalfant; LO-NOKE, J. F. Gartman; MILLER, Frank Cantrell, Jr.; MONROE, E. D. McKnight; NEVADA, Charles A. Hesterly; OUACHITA, Bruce Ellis; PHILLIPS, William W. Biggs; PULASKI, F. R. Buchanan, Jerome Levy, James L. Smith, Gilbert Dean, Samuel B. Thompson, George K. Mitchell, William S. Orr, Curry B. Bradburn, Benjamin Drompp, G. Thomas Jansen, W. Myers Smith, James R. Weber, Guy R. Farris, and John Satterfield; SEBASTIAN, William B. Stanton, A. C. Bradford, R. C. Goodman, William G. Lockhart; ST. FRANCIS, J. Max Roy; UNION, Paul G. Henley, Kenneth R. Duzan; WASHINGTON, John Warren Murry, Wilbur G. Lawson; WHITE, Porter R. Rodgers, Sr.



The President's Banquet in the Ballroom of the Arlington Hotel on Tuesday Evening.



The head table at the President's Banquet in the Crystal Ballroom of the Arlington Hotel, Tuesday, May 2, 1967. From left to right: Mr. Paul C. Schaefer, Executive Vice President; Mrs. Schaefer; Mrs. Shuffield, Elvin Shuffield, Secretary; Mrs. Norton, Joseph A. Norton, president-elect.

COUNCILORS, Eldon Fairley, Bascom P. Raney, Paul Gray, Hugh Edwards, L. J. Pat Bell, T. W. Townsend, H. W. Thomas, Paul Sizemore, Karlton H. Kemp, John P. Wood, Jack Kennedy, Robert F. McCrary, W. Payton Kolb, James R. Morrison, Stanley Applegate, Ross Fowler, C. C. Long, A. S. Koenig, President L. A. Whittaker, President-elect Joseph A. Norton, First Vice President Art B. Martin, Speaker John P. Price, Vice Speaker Amail Chudy, Secretary Elvin Shuffield, Past Presidents Joe Verser, W. A. Snodgrass, T. Duel Brown, C. R. Ellis, Euclid M. Smith, O. J. T. Johnston, C. Lewis Hyatt.

The chairman of the Credentials Committee, C. R. Ellis, reported that a quorum was present.

Speaker Price introduced the following special guests:

Mrs. Asher Yaguda, Newark, New Jersey, President of the Woman's Auxiliary to the American Medical Association;

Mrs. John McCollough Smith, Little Rock, President of the Woman's Auxiliary to the Arkansas Medical Society; Mrs. Art B. Martin, Fort Smith, President-elect of the Woman's Auxiliary to the Arkansas Medical Society; Mrs. C. C. Long, First Vice President and nominee for the position of President-elect of the Woman's Auxiliary to the American Medical Association and Mr. A. M. Edwards, Field Representative of the American Medical Association.

Upon the motion of Wynne and Hesterly, the House approved the minutes of the 90th Annual Session of the Arkansas Medical Society as published in the June 1966 issue of the Journal of the Arkansas Medical Society.

Upon the motion of Norton and Farris, the House approved the minutes of the Special Session of the House of Delegates held December 11, 1966, as published in the February 1967 issue of the Journal of the Arkansas Medical Society.

Speaker Price called on the chairman of the Council, H. W. Thomas, for a supplementary re-

port of the Council covering meetings held since publication of the March issue of the Journal. The following report by Dr. Thomas was accepted by the House and referred to Reference Committee Number Two:

#### SUPPLEMENTAL REPORT OF THE COUNCIL

The Council met Sunday, April 9, 1967, at the Arlington Hotel and transacted the following business:

I. Approved and referred to the House of Delegates a report by the Tuberculosis Committee, containing the following recommendations:

1. That all phases of tuberculosis control be placed under the direction of the Arkansas State Board of Health;
2. That the operation of the Arkansas Tuberculosis Sanatorium in Booneville should be continued for the care of tuberculosis patients;
3. That a 20 to 30 bed unit be established at the Univer-

sity of Arkansas Medical Center as a diagnostic and treatment center for tuberculosis, and that this facility be limited to a teaching facility, including student as well as resident and intern training.

4. That if a unit should be organized for the care of tuberculosis in a general hospital, it should be organized outside of the Little Rock area, and that the program should be limited to one such unit and that the results be carefully weighed and reported to the Arkansas Medical Society before more units are established.
  5. The Division of Tuberculosis Control should continue its present program and the operation should be expanded to include more case finding in the high risk groups.
  6. The Arkansas Tuberculosis Sanatorium expand its services to include treatment of chronic chest diseases which are medically indigent and referred to the sanatorium by their physician when there are beds available.
- II. Adopted and approved the annual report of audit.
- III. Decided to wait until a definite need is established before appointing additional committees for the review of Medicare claims.
- IV. Adopted a proposed statement of policy for liaison



The head table at the President's Banquet in the Crystal Ballroom of the Arlington Hotel, Tuesday, May 2, 1967. From left to right: L. A. Whittaker, president; Mrs. Whittaker; H. W. Thomas, Chairman of the Council; Mrs. Thomas; A. S. Koenig, chairman of the Annual Session Committee, and Mrs. Koenig.



On behalf of the Medical Education Foundation for Arkansas, Robert Watson presents a check for \$6,158 to Dean Winston K. Shorey for loans to medical students at the University of Arkansas Medical Center.

with the Welfare Department as follows:

1. The Arkansas Medical Society shall be represented by the Executive Committee as designated by the Constitution. This Committee shall be empowered to represent the Arkansas Medical Society with regard to policy, fee schedules, contractual agreements, or changes therein. The Executive Committee shall meet with the Welfare Commissioner on a regular monthly basis.
2. To establish the policy in the Welfare Department that all physicians in Arkansas will provide medical and surgical services to Welfare clients on a usual and customary fee basis. Any fee schedule or separate departmental contract with separate specialty groups will be approved by the Council of the Arkansas Medical Society.
3. The Liaison (Executive) Committee shall be the Arbitration Committee between the Welfare Department and the physicians of Arkansas. In the event that a dispute arises involving fees, services, or policies of the Welfare Department, or for other reasons, the case shall first be submitted to the Liaison Committee. In case agreement cannot be reached between the Welfare Commissioner, the doctor involved, or the Liaison Committee, then the case will be presented at the next called meeting of the Council of the Arkansas Medical Society with the Welfare Commissioner and the doc-

tor involved present.

4. The Arkansas Medical Society is firm in the belief that Welfare clients are wards of the State and that the responsibility of providing for the needs of these people rests in the State. The monetary needs of the Welfare Department shall be provided by the legislative branch of the State government. Physicians should no longer be asked to subsidize medical care of the Welfare clients.
5. The Arkansas Medical Society shall provide all members of the Executive Committee with a ten cents per mile travel allowance for all regular meetings in Little Rock, or in cases where travel must be done on official business involving a disputed case.

V. Approved the actions of the Executive Committee wherein the Committee decided not to oppose the position of the Board of Trustees of the American Medical Association with regard to the AMA disability insurance program. The Executive Committee decided to defer judgment because it felt that the American Medical Association Insurance Committee and Board of Trustees were well informed on the program and were taking care of the best interests of its members.

VI. Authorized Mr. Warren, Society attorney, to continue his interest and attention to the discussions on a licensing law for radiology and pathology technicians.

VII. Requested the attorney for the State Board of Health



President's Banquet in the Crystal Ballroom of the Arlington Hotel, May 2, 1967. L. A. Whittaker administers the oath of office of president of the Society to Joseph A. Norton.

and the attorney for the Medical Society to confer regarding the confusion on the expiration of terms of the State Board of Health.

VIII. Requested Dr. Lee Parker, Medical Society representative to the Advisory Committee for the Heart, Cancer and Stroke Program, to report on the various aspects of planning the program during the annual session.

IX. The Council, after reviewing a Judicial Council statement on the ethics of doctor ownership of pharmacies and drug companies, agreed to give its full support to the position of the Judicial Council.

X. Voted to send a member on the Committee for Physical Fitness and School Health to the 11th National Conference on Physicians and Schools, in Chicago October 4 through October 7, 1967.

XI. Voted to advise all county medical societies to refer medical credit card plans to the Society's legal counsel for review before adoption of the plan.

XII. Voted to approve and refer to the House of Delegates a suggestion that the State Board of Health be loaned \$10,000 by the Medical Society on a ninety-day basis for the purpose of making emergency repairs to fire-damaged equipment.

XIII. Approved a resolution urging the American Association of Medical Assistants to make membership in the National Association optional for members of the State group.

XIV. Requested that the Society's Insurance Committee review the group Blue Cross-Blue Shield plan carried by members, with a view to up-dating the benefits of the plan.

Speaker Price called for reports of committees. Elvin Shuffield, chairman of the Committee on Medical Legislation, reported on the 1967 session of the Legislature. The report was accepted for the information of the House.

Speaker Price called for new business to come before the House.

The delegate from Ouachita County, Bruce Ellis, presented the following resolution:

**RESOLUTION RE: FULL PAYMENT OF USUAL  
PHYSICIANS' FEES BY BLUE SHIELD  
OF ARKANSAS**

WHEREAS, the cost of rendering medical services has increased rapidly the past five years, and

WHEREAS, over 40% of Blue Shield plans

now pay the usual fees charged by physicians, and

WHEREAS, the majority of people purchasing medical contracts have shown increasing interest in prepaid comprehensive medical care plans, and

THEREFORE, BE IT RESOLVED, that the House of Delegates of the Arkansas Medical Society instruct the proper Liaison Committee with Blue Cross-Blue Shield that Blue Shield of Arkansas begin immediate negotiations in present and future Blue Shield contracts to pay the usual physicians' fees in full to all participating physicians of Blue Shield in Arkansas. The resolution was referred to Reference Committee Number Three.

The delegate from Union County, Paul G. Henley, presented the four resolutions:

#### **RESOLUTION RE: CHANGES IN CONSTITUTION AND BY-LAWS**

BE IT RESOLVED that the Union County Medical Society request that the following changes be made in the Constitution and By-Laws of the Arkansas Medical Society to accomplish the following:

(1) No new business will be introduced at the first session of the House of Delegates during the Annual Meeting unless all delegates of each county medical society have been notified as to the contents and nature of the new business thirty (30) days prior to the Annual Meeting.

(2) New business of an emergency nature, not included in the above category, may be presented either at the first or second session of the House of Delegates at the Annual Meeting if the business in question is ruled an emergency by a ma-



The gavel, symbol of the office of the president of the Arkansas Medical Society, passes from L. A. Whittaker to Joseph A. Norton. President Banquet, Tuesday, May 2, 1967.

jority of seventy-five (75) per cent of the delegates present and voting.

The resolution was referred to Reference Committee Number Three.

**RESOLUTION RE: ARKANSAS BLUE CROSS-BLUE SHIELD**

BE IT RESOLVED that the Union County Medical Society request that Arkansas Blue Cross and Blue Shield, Inc., delete from their contracts references made concerning the physician as to whether they are participating or non-participating. We suggest that Arkansas Blue Cross and Blue Shield make no distinction between any physician licensed in the State of Arkansas and that all physicians licensed in the State be reimbursed or their patients be paid 100% of the customary Blue Cross-Blue Shield payment.

The resolution was referred to Reference Committee Number Three.

**RESOLUTION RE: INSURANCE COMPANIES UNDERWRITING AUTOMOBILE COLLISION AND LIABILITY INSURANCE**

WHEREAS, several insurance companies operating in this region are causing patients to bring to their personal physicians forms which request the physician to certify the patient's present and future physical and mental capacities to operate automobiles in a safe manner, and

WHEREAS, these forms present questions which cannot be honestly answered by any thoughtful physician, and

WHEREAS, these insurance companies are placing personal physicians in a position of referee in regard to a contract between an insurance company and its policyholders, without prior consent of these physicians to act as referee and,

WHEREAS, to our knowledge, the medical profession was not consulted regarding this unprecedented procedure, and

WHEREAS, no contract exists between physicians at large and these companies to perform as referee,

BE IT RESOLVED that the Arkansas Medical Society condemns the use of such forms in arbitrary manner by such companies and expresses resentment of this imposition on physicians whose relationships with their patients could be greatly damaged if a client is denied automobile insurance,

BE IT FURTHER RESOLVED that a copy of this resolution be submitted to the Arkansas Insurance Commission, and such insurance companies as may underwrite automobile collision and liability insurance in this region.

The resolution was referred to Reference Committee Number Three.

Dr. Henley then read a resolution proposed by Union County, regarding Wilbur J. Cohen, Undersecretary of Health, Education and Welfare.

The councilor from the eighth district, W. Payton Kolb, objected to the consideration of this resolution. Upon standing vote, the House upheld the objection by 45 to 27. The Counsel and Vice Speaker ruled that since the objection was not upheld by a two-thirds vote, the matter could be reintroduced for consideration. The delegate from Greene-Clay County, Omer E. Bradsher, then requested that the resolution be reconsidered in toto. The Speaker then referred the resolution to Reference Committee Number Three.

The delegate from Garland County, M. R. Springer, Jr., introduced the following resolution:

**RESOLUTION RE: AMA DISABILITY INSURANCE PROGRAM**

WHEREAS, it is assumed that affected members of the Arkansas Medical Society have read the letter from the Continental Casualty Company dated April 18, 1967, addressed to all members presently covered by this insurance; and

WHEREAS, the original policy contains such features as lifetime coverage, etc., and the proposed changes are such as to alter the policy beyond recognition; therefore, it appears that the original policy should be regarded as a misrepresentation, or else the company's calculations were so inaccurate as to be beyond reasonable understanding. It is significant that Continental Casualty has made no effort to explain this; and

WHEREAS, it appears that Continental Casualty's sole contention is based on the original policy being actuarially unsound; yet, the carrier has failed to make a genuine effort to convince the Society. If the policy is actuarially unsound, certain pertinent data, facts, and figures should be presented;

WHEREAS, it appears that the AMA Board of Trustees is adamant concerning retention of the originally sold policy, and that they have failed



President's Banquet, Tuesday, May 2, 1967, Arlington Hotel. Upon being installed as president, Joseph A. Norton makes his address to the membership.

to offer any explanation that could, by any stretch of the imagination, be regarded as satisfactory;

**THEREFORE, BE IT RESOLVED**, that the Garland County Medical Society requests that the Arkansas Medical Society instruct our AMA delegates to make every effort to influence the AMA Board of Trustees to retain the original policy, to be issued by a different carrier, thereby discontinuing our business with Continental Casualty Company.

The resolution was referred to Reference Committee Number Two.

C. R. Ellis, chairman of the Constitutional Revisions Committee, presented the following proposed amendments for final consideration at this convention:

1. Amend the By-Laws, Chapter VIII, Section 1 (A) by adding as committee Number Twelve "Committee on Area-Wide Planning";
2. Amend the By-Laws, Chapter VIII, by add-

ing Section 13, which reads as follows: "A Committee on Area-Wide Planning of Medical Facilities shall take the initiative in organizing community, district, and/or state groups for the efficient planning of new medical and hospital facilities or additions made to such existing institutions".

Dr. Ellis also presented the following proposed amendments for the first reading:

**PROPOSED AMENDMENT REGARDING RULES  
GOVERNING DELIBERATIONS OF THE  
HOUSE OF DELEGATES**

Amend Chapter XI as follows: Add after Chapter XI, the words: Rules governing deliberations of the House of Delegates. Make the present Chapter XI, Section 1 of Chapter XI. Add a new section as Section 2:

All items expected to be considered at the Annual Meeting of the House of Delegates of this

Society must be printed in the Journal of this Society in the month preceding the Annual Meeting. Any new business proposed during the first session of the House of Delegates of this Society must have a two-thirds majority of the delegates present and voting for such introduction into this session. Any new resolutions or other new business proposed for introduction to this House of Delegates after the first session in each annual meeting must have unanimous consent of those delegates present before its introduction.

#### **PROPOSED AMENDMENTS REGARDING MEMBERSHIP**

Amend Chapter I of the By-Laws, Section 1, to read as follows:

Section 1. The name of a physician on the properly certified roster of members of a component society which has paid its assessments, shall be prima facie evidence of eligibility for the same classification of membership in this society.

Add as Section 2 of Chapter I of the By-Laws:

Section 2. Classification and Description of Types of Membership in this Society:

##### **A. Active member**

An active member of this Society shall have the following qualifications:

1. Possess the degree of Doctor of Medicine, issued by a Medical School, which at the time such a degree was conferred, was approved by the Council on Medical Education of the American Medical Association;
2. Hold an unrevoked license to practice medicine and surgery issued by the Board of Medical Examiners which consists of members recommended by this Society; and
3. Has satisfactorily served at least twelve months as a provisional member of this Society;

The eligibility requirements as set forth in the preceding sentences are not to apply, however, to members in good standing in any component society at the time of the 1937 Annual Session.

##### **B. Provisional Membership**

Any physician who meets the requirements of these by-laws as stated in Chapter I, Section 2, A, (1) and (2) above, may become a provisional member of this Society by applying to any component chapter. He must serve in this classification of membership for a period of not less than

twelve months. During this provisional membership, the physician may serve on appointed committees but may not have the right to hold office, to vote, to endorse applications for membership, or to serve as a delegate or alternate delegate. During the period of provisional membership, the member must attend at least one orientation course offered by this society or offered by a component society and approved by this society. Prior to becoming an active member of this society, the provisional member must be considered by an elected Board or Committee (hereinafter called Board of Censors) of his component society and duly elected to active membership as required by the Constitution and By-Laws of his component society.

1. If, at the end of the provisional period, the provisional member fails to be elected to regular membership, the Board of Censors of said component county medical society will provide counsel directed toward rehabilitation of the rejected physician. The rejected physician may also request the Board of Censors to recommend to the society a further period of provisional membership and it may be granted, the time at which it may begin and the duration of the added provisional period to be stipulated by the Board of Censors in its recommendation in each individual case, though it may not exceed a period of one year from the date of rejection by the county society. At the end of this additional period of provisional membership, the candidate will again be considered by the Board of Censors which will place his name before the county society again with the recommendations as to acceptance or rejection. If the provisional member fails to be elected to active membership after the second provisional period, he may not again apply for provisional membership in any component society until one year has elapsed after the second rejection by the county society or upon appeal to the Council of the State Medical Society as provided in Section 7, Chapter 9, of the Constitution and By-Laws.

Qualifying orientation programs shall be offered at the time and place of the Annual Session of the Arkansas Medical Society and one other time as set by the Council during the year.



President's Banquet, Tuesday, May 2, 1967. One of the first duties of Joseph A. Norton upon assuming the office of president of the Society was to present a plaque of appreciation to the immediate past president, L. A. Whittaker.

Neither internship, nor resident membership, nor military membership shall be considered as a substitute for any part of the twelve months of provisional membership.

Any provisional member accepted on transfer from any component medical society shall continue as a provisional member the full twelve months as outlined above before being considered for active membership.

#### C. Life Membership

An active member who shall have attained his eightieth year and shall have been a member of his county medical society in Arkansas or elsewhere in the United States continuously since beginning the practice of medicine, or who for fifty years shall have been continuously a member of his county medical society in Arkansas or elsewhere in the United States, shall, upon establishing the above facts to the satisfaction of his county medical society, and upon the recommendation of such

society, be granted the status of Life Member. Such member shall enjoy full membership privileges and shall be exempt from the payment of further dues or assessments.

#### D. Affiliate Membership

An active member in good standing in his county society may, upon the recommendation of such society, be granted affiliate membership with full voting and other privileges where one or more of the following conditions exist: retirement from active practice, physical or other disability of a character preventing the practice of medicine, a serious and prolonged illness, or financial reverses. Affiliate membership shall be on an annual basis only and a member must be recommended each year for such special status by the secretary and president of this county medical society following a review and reassessment of his particular situation. An affiliate member shall enjoy full membership privileges and shall

be exempt from the payment of dues and assessments during the year in which he is granted such status, and a certificate of membership shall be issued to him for such year.

**E. Affiliate Membership for Interns and Residents**

An annual affiliate membership shall be granted interns and residents, provided they are fully or partially excused from the payment of county society dues, and provided the request for exemption is transmitted through a component society of the Arkansas Medical Society. The requirement for active membership prior to exemption shall be waived for such affiliate members. This type of member shall be accorded full privileges except that he may not vote or hold office, and he shall receive the Journal of the Arkansas Medical Society.

**F. Military Members**

Regular members of the Arkansas Medical Society who are in the service of the armed forces of the United States, not as career officers, may be classified as military members, and carried on the rolls of their respective county societies as such. Military members shall have a waiver of dues during the time of service, provided that they are in good standing at the time they entered the armed forces. Military members shall enjoy full membership privileges and certificates of membership shall be issued to them for each year.

Amend the By-Laws to make the present Section 2 renumbered as Section 3 and renumber the present Section 3 as Section 4.

**PROPOSED AMENDMENT ON  
FEE SCHEDULE COMMITTEE**

Amend Chapter VIII as follows: Add as standing committee Number Thirteen "Committee of Fees". Add a Section 13 to Chapter VIII as follows:

"The Committee of Fees of this Society shall be composed of not less than 12 members, 4 members going off the committee each year. The president in office at the time this committee is approved shall appoint one-third of the members to serve one year, one-third of the members to serve two years, and one-third of the members to serve three years.

Each succeeding president shall appoint one-third of the members of this committee to replace those going off the committee that year.

In order for the physicians of the Society to be fairly represented on this Committee, two-thirds of the members of this Committee shall be physicians who do not confine themselves to any specialty in the practice of medicine.

This committee on fees shall be required to meet at least every six months. The membership of the Society must be notified by way of its official Journal the dates of the meetings of this Committee at least forty-five days prior to the meeting date.

Any group of physicians or specialty group within our society may have the privilege of sending one representative to each one of these meetings provided the request is made for attendance at least thirty days prior to the date of the meeting."

All proposed amendments to the Constitution and By-Laws were referred to Reference Committee Number Three.

Lee B. Parker, the Medical Society representative to the Advisory Committee on the Heart, Cancer and Stroke Program, presented a report on the program which was received for the information of the House.

A delegate from Pulaski County, Gilbert O. Dean, presented the following resolution:

**RESOLUTION RE: MEMBERS JOINING  
AFTER JULY 1**

WHEREAS, no provision is made for a physician just beginning his practice who wishes to join the Arkansas Medical Society after July each year to pay dues other than full annual dues, and

WHEREAS, young physicians establishing their practice are already overburdened with the expenses of opening an office; and

WHEREAS, the American Medical Association, and most county medical societies, allow new members to pay one-half year's dues if they join after July 1;

BE IT THEREFORE RESOLVED that the House of Delegates take cognizance of this matter, and

BE IT FURTHER RESOLVED that the matter be referred to the proper committee for the purpose of considering fractional dues payments for those new members who do not enjoy a full year's membership in the Arkansas Medical Society in the year in which he joins.

The resolution was referred to Reference Committee Number Two.

Dr. Dean also presented the following resolution:

**RESOLUTION RE: LIFE MEMBERSHIP**

WHEREAS, the By-Laws of the Arkansas Medical Society require that a member must have attained his eightieth year, being a member of a county medical society continuously since the beginning of his practice; or must have been a member of his county medical society for fifty years before being granted the status of Life Membership; and

WHEREAS, the American Medical Association grants a non-dues paying membership when a physician has attained his 70th birthday, and

WHEREAS, most county medical societies and specialty societies grant non-dues paying membership at a much lower age than 80 years;

BE IT THEREFORE RESOLVED that the Arkansas Medical Society consider amending its By-Laws to lower the requirements to age 65 or thirty years of continuous county and state medical society membership for granting the status of Life Membership, and

BE IT FURTHER RESOLVED that this matter be referred to the proper committee for study and recommendations.

The Speaker referred this resolution to Reference Committee Number Three.

F. R. Buchanan of the Pulaski County delegation presented the following resolution:

**RESOLUTION RE: PROFESSIONAL CARE FOR THE MEDICALLY INDIGENT**

WHEREAS, the physicians of Arkansas have in the past rendered professional care to the medically indigent of this State, either independently or in cooperation with all State agencies, and

WHEREAS, certain funds have been made available for compensation for care of such patients by institutions and individuals, and

WHEREAS, additional funds are to be made available for said purposes, and

WHEREAS, there now exists marked discrepancy as to equitable disbursement of such funds for medical and dental care of medically indigent patients in the State of Arkansas,

BE IT HEREBY RESOLVED that the Arkansas Medical Society recommends to all agencies of the State of Arkansas concerned with care of

the medically indigent that such funds be disbursed to all individuals on an equitable basis for service rendered;

AND BE IT FURTHER RESOLVED that the Arkansas Medical Society recommends the "usual and customary fee" as the basis for such compensation to all rendering said services,

AND BE IT FURTHER RESOLVED THAT the Arkansas Medical Society pledge its members to continue to offer their services for care of the medically indigent when no funds for compensation are available, providing the aforementioned recommendations are implemented by those agencies of the State of Arkansas to assure equitable compensation to physicians, dentists and related professional persons from funds available for such purposes.

This resolution was referred to Reference Committee Number Two.

The following report of the Sub-Committee on Tuberculosis was referred to Reference Committee No. 1:

**REPORT OF THE SUB-COMMITTEE  
ON TUBERCULOSIS**

The Sub-Committee on Tuberculosis of the Arkansas Medical Society met April 1, 1967, at the Arkansas Tuberculosis Sanatorium, State Sanatorium, Arkansas. The meeting was called to order at 2:00 P.M. by Dr. Harley C. Darnall, chairman of the Sub-Committee. Dr. Darnall officially appointed Dr. Sam Kuykendall, Little Rock, a member of the Sub-Committee for this meeting. This action was taken due to the absence of other members of the committee. The appointment of Dr. Kuykendall as a member of the Committee was agreed upon by the members of the Committee present and Dr. L. A. Whittaker, president of the Arkansas Medical Society. Dr. Kuykendall was needed to complete a quorum for the meeting.

Those present were: Harley C. Darnall, Fort Smith, Chairman; Kenneth A. Siler, Harrison; Sam J. Kuykendall, Little Rock, W. Paul Reagan, Director of the Division of Tuberculosis Control of the Arkansas State Board of Health, Little Rock; W. Duane Jones, Medical Director of the Arkansas Tuberculosis Sanatorium, and L. A. Whittaker, Fort Smith, secretary by appointment. Those members of the committee not in attendance were: Albert W. Lazenby, Dumas; Charles

## PROCEEDINGS

C. Tracy, Pine Bluff, Joseph G. Shelton, Ashdown.

The Committee members had all read and studied the report of the Tuberculosis Control in Arkansas by Karl H. Pfuetze, M.D., and John B. Stocklen, M.D., which was financed by the Arkansas Tuberculosis Association and co-sponsored by the Arkansas Medical Society.

It was felt the recommendations on pages 28 and 39 in the report were the parts the Committee would be concerned with and would discuss at this meeting as it was a resume of the entire report.

**RECOMMENDATION No. 1.** That all phases of tuberculosis control conducted by the State of Arkansas, specifically, the operation of the Division of Tuberculosis and the operation of the Arkansas Tuberculosis Sanatorium, Booneville, should be placed under the direction of the Arkansas State Board of Health. The committee recognized this will require legislative study and action if any changes are to be made in this recommendation. It was the action of the Sub-Committee that no change be made in the present respective Boards of the Booneville Sanatorium and the Arkansas State Board of Health.

Because of the difference of opinions which now exists between the staff of the Arkansas State Board of Health and the Arkansas Tuberculosis Sanatorium regarding the conduct of the tuberculosis program, it was the consensus that a coordinating committee of interested persons should be set up to consolidate the ideas of the State Agencies concerned.

**RECOMMENDATION No. 2.** The operation of the Arkansas Tuberculosis Sanatorium, Booneville, should be continued for the care of tuberculosis patients. The care of the tuberculosis patients at the McRae Sanatorium should be discontinued as soon as possible. This has already been done by law in that the patients at McRae are to be transferred to the Arkansas Tuberculosis Sanatorium by July 1, 1967. The Committee was in agreement with this recommendation and the action taken by the legislators.

**RECOMMENDATION No. 3.** The Sub-Committee approved the recommendation that a 20-30 bed unit be established at the University of Arkansas Medical Center as a diagnostic and treatment center for tuberculosis. Also, that this facility be limited to a teaching facility including student as well as resident and intern training.

**RECOMMENDATION No. 4.** This recommendation created the most lengthy discussion among the members. The Committee agrees in principle the Division of Tuberculosis Control should organize one unit for the care of tuberculosis with 20-30 beds in a general hospital preferably not in the Little Rock area. Since the mechanics and actual details of implementing this plan are not available to the Committee, no judgment could be passed on approval of such a plan. It was further recommended that if a unit is established it should be given a fair trial before further units are considered or created. The Sub-Committee recommends that those in charge of the program report back to the Committee with a full report after a trial period has lapsed. After adequate consideration by the Committee, this would be brought before the Council with the recommendations of the Committee as to whether further studies on this one unit should be done or the creation of other units. The Committee has taken under consideration that those changes of treating patients in a general hospital

is a new concept and if all assumptions made are not correct, it would be disastrous to the Tuberculosis Control Program in Arkansas.

The Committee also recommended a carefully worded statement be prepared evaluating the present concept of the communicability of tuberculosis—that tuberculosis is a chronic disease requiring constant and continuous surveillance and that it is not to be considered a mild non-contagious disease. It was further recommended the statement should be prepared and approved by the Council of the Arkansas Medical Society prior to being released to the news media for publication.

**RECOMMENDATION No. 5.** The Sub-Committee agreed the Division of Tuberculosis Control should continue its present program and the operation should be expanded to include more case-finding in the high risk groups.

It is further recommended that improved methods and materials for case-finding be emphasized.

**RECOMMENDATION No. 6.** The Sub-Committee further recommends the Arkansas Tuberculosis Sanatorium expand its services to include treatable, chronic chest diseases in patients which are medically indigent and referred to the Sanatorium by their physician when there are beds available and not in use for the treatment of tuberculosis.

The Speaker called the attention of the members of the House of Delegates to meetings of the Reference Committees and urged all physicians to take advantage of the opportunity to participate in the open hearings on the various reports and resolutions referred to each committee.

Speaker Price announced that elections would be held immediately following adjournment of the House to select nominees for the vacancies on the State Medical Board and the State Board of Health.

The Speaker then announced that the selection of the nominating committee for election of officers for the ensuing year would be made. Delegates from the various councilor districts held meetings on the floor and selected the nominating committee as follows: First District, David Pontius; Second District, Jim Lytle; Third District, L. J. Pat Bell; Fourth District, Guy U. Robinson; Fifth District, Bruce Ellis; Sixth District, James D. Armstrong; Seventh District, Clyde Paulk; Eighth District, James Morrison; Ninth District, J. Warren Murry; Tenth District, A. S. Koenig.

The House adjourned at 2:45 P.M.

## GENERAL SESSIONS

### Monday Morning, May 1, 1967

The First Vice President of the Society, Dr. Art B. Martin of Fort Smith, presided at the first general session in Room "C" of the Arlington Hotel on Monday, May 1. He called the meeting to order and presented the following speakers:



The members of the Fifty Year Club were honored at a breakfast on Tuesday morning, May 2, 1967, in Cafe 2 of the Arlington Hotel. J. H. McCurry (left foreground) is secretary of the club and Dr. E. D. McKnight (right foreground) is president. Dr. R. H. Whitehead (far left) was named president-elect of the club.

Dr. Lula O. Lubchenco, Professor of Pediatrics and Co-Director of the Newborn and Premature Infant Center of the University of Colorado Medical Center, Denver, "The Detection of High Risk Infants"; Dr. W. R. Christensen, Professor and Head of the Department of Radiology of the University of Utah College of Medicine, Salt Lake City, "Gastric Ulcer"; Dr. Thomas W. McElin, Chairman of the Department of Obstetrics and Gynecology at the Evanston Hospital in Evanston, Illinois, "Amenorrhea: Diagnosis and Treatment"; Dr. James F. Hammarsten, Vice Chairman of the Department of Medicine of the University of Oklahoma School of Medicine, Oklahoma City, "Precipitating Causes of Congestive Heart Failure".

Following the scientific lectures, Dr. L. A. Whittaker of Fort Smith made his address as President of the Arkansas Medical Society (see

page one).

#### **Monday Afternoon, May 1, 1967**

The Second General Session on Monday afternoon was presided over by Dr. William A. Snodgrass, a past president from Little Rock. The program for the early part of the afternoon was a joint scientific session of the Society and the Association of Tumor Clinic Staff Members in Arkansas with Dr. Frederic E. Mohs as speaker. Dr. Mohs is Head of Chemosurgery Clinic and Associate Clinical Professor of the Department of Surgery of the University of Wisconsin at Madison; he discussed "Chemosurgery for the Microscopically Controlled Excision of Skin Cancer". Following intermission, the General Session of the Society continued as follows: "Differential Diagnosis of the Red Eye", Dr. Albert N. Lemoine, Jr., of the University of Kansas Medical Center in Kansas

City; "Clinical Pathological Conference", with Dr. William E. Jaques, Professor and Head of the Department of Pathology of the University of Arkansas Medical Center, and Dr. Gilbert S. Campbell, Professor and Head of the Department of Surgery of UAMC.

### GENERAL SESSION

#### Tuesday Morning, May 2, 1967

The Third Vice President of the Society, Dr. David H. Pontius of West Memphis, served as presiding officer at the session on Tuesday morning, May 2, in Room "C" of the Conference Center. A Symposium on "Organ Transplants" was presented with discussions on "Immunologic Aspects" by Dr. William T. Kniker, Assistant Professor of Pediatrics and Assistant Director of the Clinic Study Center of the University of Arkansas Medical Center; "Bone Marrow Transplants", by Dr. Joseph W. Ferrebee of the Mary Imogene Bassett Hospital in Cooperstown, New York, and "Kidney Transplants" by Dr. W. J. Flanigan, Assistant Professor of Medicine at the University of Arkansas Medical Center. Following the Symposium, Dr. Ralph M. Hartwell, Clinical Professor of Pathology at Louisiana State University Medical Center in New Orleans, spoke on "Enzymes in Diagnosis of Disease".

### RELATED MEETINGS

*Association of Tumor Clinic Staff Members in Arkansas.* The Association held a luncheon meeting in the Fountain Room of the Arlington on Monday, May 1, with chairman G. Thomas Jansen presiding.

*The Crippled Children's Division to the State Department of Welfare.* A luncheon meeting of the consultants to the Crippled Children's Division was held on Monday, May 1, in the Mercury Room of the Arlington Hotel.

*The Arkansas State Advisory Committee to the Selective Service System* met for lunch on Tuesday, May, in Cafe 2 of the Arlington Hotel, with chairman Dr. Gerald H. Teasley of Texarkana presiding.

*The Urological Section of the Arkansas Medical Society* met on Tuesday, May 2, in Room "C" for luncheon and a scientific program with Dr. W. J. Flanigan as guest speaker.

*The Eye, Ear, Nose and Throat Section* met all day on Tuesday, May 2, in the Mercury Room

of the Arlington Hotel. Speakers included Dr. G. O. Proud of the University of Kansas Medical Center in Kansas City, Dr. Thomas H. Raymond of Fort Smith, Dr. A. N. Leomine, Jr. of the University of Kansas Medical Center, and Dr. Morrissey Henry, of Fayetteville. Dr. Stanley McEwen of Fort Smith presided as chairman of the Section.

*The Arkansas Society of Pathologists* held a luncheon meeting in the Jupiter Room of the Arlington Hotel on Tuesday, May 2.

*The Arkansas Orthopedic Society* held a luncheon meeting in the Mars Room of the Arlington Hotel, followed by a scientific program and business meeting.

*The Arkansas Radiological Society* met on Tuesday, May 2, in the Juno Room of the Arlington Hotel with Dr. William R. Christensen of Salt Lake City as guest speaker.

*The Arkansas Academy of General Practice* held a scientific session in the Venus Suite of the Arlington Hotel on Tuesday afternoon, May 2, with Dr. E. Adams Daneman of St. Simons Island, Georgia, as guest speaker.

*The Arkansas Psychiatric Society* met Tuesday afternoon, May 2, in the Montagu Room of the Arlington.

*The Arkansas Society of Internal Medicine* met for a luncheon, Tuesday, May 2, in the Fountain Room of the Arlington Hotel.

*The Pediatric and Obstetrics-Gynecology Sections* held a joint scientific session on Tuesday afternoon, May 2, with Dr. Thomas W. McElin, Dr. Lula O. Lubchenco, Dr. John B. Nettles, Dr. Betty A. Lowe and Dr. Richard B. Clark participating in the program. The two groups held separate business sessions following the lectures and then had a joint cocktail party.

### OTHER ACTIVITIES

#### Fifty Year Club

The Society hosted a breakfast for members of the Fifty Year Club at 7:30 A.M. on Tuesday, May 2, in Cafe 2 of the Arlington Hotel. The following members of the Club were present: Dr. E. D. McKnight, president, Dr. J. H. McCurry, Secretary, Dr. F. J. Scully, Dr. D. W. Goldstein, Dr. A. D. Cathey, Dr. L. A. Martin, Dr. O. H. Clopton, Dr. O. J. T. Johnston, Dr. G. C. Coffey, Dr. J. W. Butts, Dr. W. K. Smith, Dr. D. B. Stough, Dr. E. A. Purdum, Dr. Stanley Gates, Dr. C. W. Hall, Dr. W. H. Moreland, and Dr. R. H. Whitehead.

Dr. Whitehead was elected president-elect of the group.

#### **Past Presidents' Breakfast**

The traditional breakfast for former presidents of the Arkansas Medical Society was held on Wednesday, May 3, in Cafe 2 of the Arlington Hotel.

#### **Golf Tournament**

The annual golf tournament was held on Monday and Tuesday at Belvedere Country Club. The winners of the tournament were announced by Dr. Robert McCrary, tournament chairman, at the banquet on Tuesday evening.

#### **Cardiopulmonary Resuscitation Course**

The Arkansas Heart Association offered courses in Cardiopulmonary Resuscitation to physicians and their wives during the convention.

#### **Monday Evening Cocktail Party**

The members of the Medical Society and the Auxiliary from the Tenth Councilor District acted as hosts for a cocktail party on Monday evening, honoring the officers of the Arkansas Medical Society and the officers of the Auxiliary.

#### **President's Banquet**

The annual President's Banquet was held on Tuesday, May 2, 1967, in the Crystal Ballroom of the Arlington Hotel with the Society president, L. A. Whittaker, presiding.

The invocation was by C. Lewis Hyatt of Monticello, a past president.

President Whittaker introduced those seated at the head table, as follows: Secretary of the Society H. Elvin Shuffield and Mrs. Shuffield; President-elect Joseph A. Norton and Mrs. Norton; Chairman of the Council H. W. Thomas and Mrs. Thomas; Chairman of the Convention Committee A. S. Koenig and Mrs. Koenig; Mrs. Whittaker; the Executive Vice President, Mr. Paul Schaefer, and Mrs. Schaefer.

President Whittaker also introduced the following: Mrs. Art B. Martin, president of the Woman's Auxiliary to the Arkansas Medical Society; Mrs. John McCollough Smith, immediate past president of the Woman's Auxiliary to the Arkansas Medical Society; Mrs. Elizabeth Keigley, vice president of the Arkansas State Medical Assistants Society, Mrs. Deany Reid, past president

of the Arkansas State Medical Assistants Society, and Mr. Arthur E. Squire, Jr., president of the Arkansas Chapter, Student American Medical Association.

President Whittaker called on Robert McCrary, chairman of the Golf Tournament, for presentation of awards to winners of the tournament. The top winners were: Walter Klugh, Jr., low gross; Paul Henley, low net; G. D. Wisdom, 1st runner up, and George Brenner, second runner up.

President Whittaker announced that the scientific exhibit entitled "Multiple Punch Autografts for the Alopecias" by D. B. Stough, III, won the Aesculapius Award presented in cooperation with Mead Johnson Laboratories.

President Whittaker presented a check in the amount of \$5,169.38 to Dean Shorey of the University of Arkansas Medical Center. The check represented contributions made by physicians and their wives to the American Medical Association Education and Research Foundation, which are divided among the Nation's medical schools to augment their budgets.

On behalf of the Medical Education Foundation for Arkansas, Dr. Robert Watson presented a \$6,158 check to Dean Shorey for the loan fund of the University of Arkansas School of Medicine.

Dr. Whittaker made brief remarks concerning his year as president, expressing his thanks to H. W. Thomas as chairman of the Executive Committee and to other members of the Executive Committee who had worked so much on behalf of the Society. He also expressed his appreciation to Mr. Schaefer and Miss Richmond of the headquarters staff.

Dr. Whittaker then requested all past presidents in attendance to go to seats arranged for them near the platform for the installation ceremony. The following past presidents of the Society were present and were introduced: O. J. T. Johnston, H. King Wade, Sr., Euclid M. Smith, T. Duel Brown, James M. Kolb, Sr., William A. Snodgrass, H. King Wade, Jr., Joe Verser, C. R. Ellis, and C. Lewis Hyatt.

Dr. Whittaker requested that past presidents William Snodgrass and Joe Verser officially escort the president-elect to the rostrum for the installation ceremony. Dr. Whittaker administered the oath of office and turned the gavel over to the new president, Joseph Norton.

Dr. Norton presented a plaque of appreciation from the Society to Dr. Whittaker in recognition



The past presidents of the Society met for a breakfast on Wednesday, May 3, 1967, in Cafe 2 of the Arlington Hotel. Present were: (left to right) C. R. Ellis, C. Lewis Hyatt, William A. Snodgrass, Jr., James M. Kolb, Sr., Euclid M. Smith, Joe Verser, O. J. T. Johnston, L. A. Whittaker, and W. R. Brooksher.

of his services as president during the past year.

Dr. Norton accepted the office of president, expressing his thanks to all of the members of the Arkansas Medical Society for the honor of serving in that office. He made a plea to the members to actively participate in Society activities.

#### **MEMORIAL SERVICE**

A joint Memorial Service of the Arkansas Medical Society and the Woman's Auxiliary to the Society was held on Tuesday morning, May 2, in the Crystal Ballroom of the Arlington Hotel. The president of the Society, Dr. L. A. Whittaker, presided.

Invocation was by The Reverend Ralph C. Kutait, St. Bartholomew's Episcopal Church, Fort Smith.

Dr. Whittaker read the following names of deceased members of the Society:

- Dr. Austin F. Barr, Forrest City
- Dr. William P. Barron, Harrison
- Dr. B. A. Bennett, Little Rock
- Dr. W. H. Bollinger, Charleston
- Dr. W. H. Bruce, Pine Bluff
- Dr. J. E. Cox, Prescott

Dr. Howard A. Dishongh, Little Rock

Dr. Charles W. Dixon, Gould

Dr. Franklin M. Duckworth, Siloam Springs

Dr. C. E. Dungan, Augusta

Dr. Miles Everett Foster, Fort Smith

Dr. Allan A. Gilbert, Fayetteville

Dr. F. Herschel Gray, Little Rock

Dr. William E. Hamil, Pocahontas

Dr. Daniel R. Hardeman, Little Rock

Dr. Julius H. Hellums, Dumas

Dr. Charles G. Hinkle, Batesville

Dr. Louis K. Hundley, Little Rock

Dr. Glenn H. Johnson, Little Rock

Dr. B. T. Kolb, Little Rock

Dr. Paul Ledbetter, Jonesboro

Dr. G. D. Murphy, Jr., El Dorado

Dr. Van D. McAdams, San Antonio, Texas

Dr. Harvey C. Riley, Stuttgart

Dr. James H. Scroggin, Jacksonville

Dr. Harvey D. Shipp, Little Rock

Dr. Charles A. Smith, III, Little Rock

Dr. William H. Smith, Bono

Dr. Jesse E. Stevenson, Fort Smith

Dr. Albert H. Tribble, Hot Springs

Dr. C. J. Watkins, Little Rock

## PROCEEDINGS

Mrs. J. P. Price, Chaplain of the Auxiliary, read the following names of deceased members of the Auxiliary:

Mrs. A. D. Cathey, El Dorado

Mrs. L. Gardner, Russellville

Mrs. H. E. Murry, Texarkana

Mrs. Allan G. Talbot, Lake Village

Mrs. Harry M. White, Rogers

The Memorial Address was made by Dr. Kenneth E. Lilly of Fort Smith.

### MEMORIAL ADDRESS

#### Dr. Kenneth E. Lilly

There was once a young man who concluded his formal training as a physician and started his practice. After he had practiced for three or four months he decided to take a week-end off. When he returned to his office on Monday he was told by one of his patients how much another physician

in town thought about him. The other physician had seen the patient over the week-end and learned the family had established themselves in the young physician's practice. The other physician then made the comment which the patient had misinterpreted. The comment was "Someday he will be a fine doctor."

In the same city there was an older physician who had many years of experience. He was an accomplished artist who had great insight into the problems which are common to human beings. However, long hours and sporadic rest had taken their toll and the man had a noticeable tremor of his hands. In time his patients became aware of this and equated it with incompetence. Some of these patients saw other physicians in the community about the same complaints they had presented to their life-long friend. These other physicians changed the name and shape of the



The Executive Committee of the Council for 1967-1968. From left to right: Joseph A. Norton, Little Rock, president; T. E. Townsend, Pine Bluff, chairman of the Council; Elvin Shuffield, Little Rock, Secretary; H. W. Thomas, Dermott, President-elect.

medicines which the patients were taking. Furthermore, these physicians implied that the conclusions the patients had drawn about their former physician were probably true.

In a nearby city a physician's wife increased her domestic help gradually as her hard-working husband became more solvent. After a few years she was having a full time maid and a part-time gardener. The children grew up and became much involved in school and in their social activities. She had served in all the offices of the P.T.A.'s and lead all the fund raising campaigns at one time or another. Her husband became more deeply entrenched in his practice habits. She therefore had too much time on her hands.

Life presented her with several choices — none of which were very meaningful—all of which made her the subject of the town gossip.

It is from lives like these that we gather ourselves today to remember those of our number which have passed from this life—a life which places great responsibility on all of us.

What are we going to remember about these our friends, who have passed on before us?

Some of us here knew well at least one of these on the lists read a few moments ago. Others of us knew several of them.

The things which most readily come to mind about most of them are those things which should have been the first forgotten.

I hope we can remember some of the worthwhile things.

Have we forgotten their *ALTRUISM*? No! It had just tarnished in the mire of daily living. The same shiny ideals with which most men enter the practice of medicine are still there. Each of them can be remembered as the teacher, consultant, bright young intern, or friendly family physician who sent his patients to town to be treated when he reached his extremity of treatment. All trying to be of benefit to their fellow man.

Have we forgotten their *INFLUENCE*? No! Some of these men, though self trained in large part, have diluted the influence of distant medical centers and made it fashionable and medically sound to receive definitive care in most of our cities today. Time was when Rochester, New Orleans and St. Louis were popular with the affluent and poor alike for difficult problems and severe neuroses. But today they speak of Little Rock, Texarkana, Fort Smith, Pine Bluff, El Dorado, Blytheville, Jonesboro and so forth. This

has come about because these men proved themselves competent.

Have we forgotten their **SACRIFICES**? No! In a society which equates everything in terms of material things it is difficult to see sacrifice in terms of extra hours spent to see that suffering is relieved, spread of disease arrested and tensions abated. Many of these have paid the supreme sacrifice of an early grave because of their desire to be of service to their fellow man.

Have we forgotten their **MISTAKES, SOCIAL INDISCRETIONS** and **OUTRIGHT SINS** of these? YES! In light of these weightier attributes we can overlook their humanity.

A few years ago I heard the pastor of one of our former colleagues eulogize him to a large convocation by saying that the man's funeral was more like a day of victory than a day of sadness because of the life the departed physician lived. What a wonderful thing to have this said about any of us at the time of departure from this life.

I close with this story. Two physicians were on a fishing trip and lost their boat in one of our lakes. They were swimming to the shore and one of them became tired and felt he could not make it. He very gaspingly told his friend to go on without him and to take care of certain personal affairs for him. His friend replied to him, that if he were that tired he should put down his feet and start walking because the water was in fact shallow and he himself had been walking for half a mile.

Let this be an illustration to us who remain, that the sea of life is shallow and let us put our feet down and start walking.

Mrs. Kenneth E. Lilly of Fort Smith sang "My God and I".

Benediction was by the Reverend Kutait.

#### **FINAL MEETING, HOUSE OF DELEGATES Wednesday, May 3, 1967**

Speaker J. P. Price called the House of Delegates to order at 10:00 A.M. on Wednesday, May 3, 1966, in Room "C" of the Arlington Hotel. He called on President Joseph Norton for the invocation.

Mr. Schaefer called the roll of delegates. The following delegates, officers, and members seated as delegates by action of the House were present:

ARKANSAS, R. H. Whitehead; ASHLEY, E. C. Gresham; BAXTER, John F. Guenthner; BENTON, Harry White; BOONE, Kenneth A. Siler; BRADLEY, George F. Wynne; CHICOT, H. W. Thomas; CLARK, J. W. Kennedy; CLE-

## PROCEEDINGS

BURNE, W. M. Wells; COLUMBIA, Paul Sizemore; CRAIGHEAD-POINSETT, John B. Kirkley; Joe Verser; CRAWFORD, Jack N. Thicksten; CRITTENDEN, David H. Pontius; DESHA, Lee B. Parker; DREW, Paul A. Wallack; FAULKNER, C. A. Archer; FRANKLIN, David L. Gibbons; GARLAND, M. R. Springer, Robert McCrary, John Trieschnann; HEMPSTEAD, C. Lynn Harris; HOT SPRING, John D. Wise; INDEPENDENCE, Jim E. Lytle; JOHNSON, James M. Kolb, Sr.; LAWRENCE, J. B. Elders; LEE, Dwight Gray; LITTLE RIVER, James D. Armstrong; LOGAN, Charles Chalfant; OUACHITA, Bruce Ellis, PHILLIPS, William W. Biggs; PULASKI, F. R. Buchanan, James Flack, Jerome Levy, James L. Smith, Gilbert Dean, Samuel B. Thompson, John Herron, George K. Mitchell, William S. Orr, Curry B. Bradburn, G. Thomas Jansen, James R. Weber, Guy R. Farris, Winston K. Shorey; SEARCY, John H. Williams; SEBASTIAN, William B. Stanton, A. C. Bradford, Harley Darnall, William G. Lockhart; UNION, Kenneth R. Duzan, Frank G. Thibault; WASHINGTON, John Warren Murry, James Patrick; WHITE, Porter R. Rodgers, Sr.; COUNCILORS, Eldon Fairley, Bascom P. Raney, Paul Gray, Hugh Edwards, L. J. Pat Bell, T. E. Townsend, H. W. Thomas, Paul Sizemore, Karlton Kemp, John P. Wood, Jack Kennedy, Robert McCrary, W. Payton Kolb, James R. Morrison, Ross Fowler, C. C. Long, A. S. Koenig, President Norton, First Vice President Martin, Speaker Price, Vice Speaker Chudy, Secretary Shuffield, Treasurer Saltzman, Past Presidents Whittaker, Verser, Snodgrass, Ellis, Brooksher, E. Smith, Hyatt, Johnston.

The chairman of the Credentials Committee, C. R. Ellis, reported that a quorum was present.

The chairman of the Nominating Committee, A. S. Koenig, presented the report of the committee. He read the nominees for the position of president-elect, as follows:

H. W. Thomas, Dermott

W. R. Brooksher, Fort Smith

Elvin Shuffield moved that nominations cease for the office of president-elect. Upon second by James M. Kolb, the House so voted. W. R. Brooksher requested that his name be withdrawn and moved that H. W. Thomas be elected by acclamation. Upon second by Karlton Kemp, H. W. Thomas was unanimously elected president-elect by acclamation.

Dr. Koenig then read the following nomination:

For First Vice President: Jerome Levy, Little Rock

For Second Vice President: David H. Pontius, West Memphis

For Third Vice President: Lee B. Parker, McGehee

Treasurer: Ben N. Saltzman, Mountain Home

Secretary: Elvin Shuffield, Little Rock

C. C. Long moved that nominations for these positions cease and that the nominees be elected by acclamation. Upon second by James M. Kolb, the House so voted.

Dr. Koenig then read the following nominations:

For Speaker of the House of Delegates: J. P. Price, Monticello

For Vice Speaker of the House of Delegates: Amail Chudy, North Little Rock

E. C. Gresham moved that nominations for these positions cease and that the nominees be elected by acclamation. Upon second by Ross Fowler, the House so voted.

Dr. Koenig then read the nominations for the position of councilor for each of the ten districts:

First District: Eldon Fairley, Osceola

Second District: Paul Gray, Batesville

Third District: Paul Millar, Stuttgart

Fourth District: T. E. Townsend, Pine Bluff

Fifth District: K. R. Duzan, El Dorado

Sixth District: Karlton H. Kemp, Texarkana

Seventh District: Jack Kennedy, Arkadelphia

Eighth District: W. Payton Kolb, Little Rock

Ninth District: Stanley Applegate, Springdale

Tenth District: C. C. Long, Ozark

Hugh Edwards moved that nominations cease and that the nominees be elected by acclamation. Upon second by James M. Kolb, the House so voted.

Dr. Koenig then read the following nominations:

For Delegate to the American Medical Association (term from January 1, 1968, to December 31, 1969): J. W. Kennedy, Arkadelphia

For Alternate Delegate to the American Medical Association (term from January 1, 1968, to December 31, 1969): Purcell Smith, Little Rock

Frank Thibault moved that nominations for these positions cease and that the nominees be elected by acclamation. Upon second by Wynne, the House so voted.

Dr. Koenig then read the following nominations for the Member-at-Large position on the Arkansas State Board of Health for the term expiring June 8, 1967:

Dr. William S. Orr, Little Rock

Dr. D. W. Goldstein, Fort Smith

Dr. Kenneth R. Duzan, El Dorado

The nominations were unanimously approved by the House.

The Councilor from the fourth district pointed out that the action of the House in electing H. W. Thomas to the position of president-elect automatically created a vacancy in the councilor district position for the fourth district which he had held. He further stated that the choice of the members from the district for the office had just been elected to the position of vice president, thereby making him ineligible for the office of councilor. Upon motion of Shuffield, the House voted to expunge the record on the vote for the position of third vice president and to throw the floor open for nominations for the position of third vice president. George Wynne of Warren

was nominated by Joe Verser. Upon motion of H. W. Thomas and Elvin Shuffield, Dr. Wynne was elected third vice president by acclamation.

The Speaker then declared that a vacancy exists in the office of councilor for the fourth district and requested nominations from the floor. T. E. Townsend nominated Lee B. Parker of McGehee for the position. Upon motion of Elvin Shuffield and Paul Wallick, Dr. Parker was elected by acclamation.

The Speaker requested that the new president-elect, H. W. Thomas, be recognized. Dr. Thomas spoke briefly thanking the members of the House of Delegates for the honor bestowed upon him.

The Speaker then called for reports from the Reference Committees. The chairman of Reference Committee Number Three reported first, as follows:

#### **REPORT OF REFERENCE COMMITTEE NUMBER THREE**

**Robert F. McCrary, Chairman**

Mr. Speaker and members of the House of Delegates:

Your Reference Committee gave careful consideration to the items referred to it and makes the following report.

1. *Committee on Medical Education.* Your Committee reviewed the report of the Medical Education Committee and feels that this Committee has been active in the field of education. We recommend the planned program be carried out by the new Committee.

Mr. Speaker, I move that this report be received for the information of the House. There being no objection, the Speaker so ordered.

2. *Sub-Committee on Postgraduate Education.* The Committee reviewed the work of the Committee on Postgraduate Education. We feel their seminars have been outstanding and wish to commend them for their activities in this field.

Mr. Speaker, I move that this report be received for the information of the House of Delegates. There being no objection, the Speaker so ordered.

3. *Sub-Committee on Liaison with the Auxiliary.* Your Committee reviewed the report of the Chairman of the Sub-Committee on Liaison with the Auxiliary and we agree in full that the Auxiliary is an invaluable aid to our State Society.

Mr. Speaker, I move that this report be received for the information of the House of Delegates.

There being no objection, the Speaker so ordered.

4. *Committee on Insurance.* Your Committee reviewed the work of the Insurance Committee and feels we have three fine programs available for the physicians of the State of Arkansas. This Committee feels, however, that the physicians of the State should utilize these programs more fully and would encourage the House of Delegates to make sure their component members are aware of the availability of this insurance.

Mr. Speaker, I move that the Insurance Committee report be received for the information of the House of Delegates.

5. *Long Range Planning Committee.* This Committee studied carefully the report of the Long Range Planning Committee and we feel, as they do, that the basic problem is monetary and that until the State of Arkansas has enough foresight to provide adequate funds for their State Medical Center, we will not be able to keep abreast of the times or consider long range plans. We, therefore, request that the House of Delegates increase their activities in soliciting the higher education commission and individual legislators to provide for increased funds for current, as well as long range, plans.

Mr. Speaker, I move that this report be received for the information of the House of Delegates. There being no objection, the Speaker so ordered.

6. *Report of the Executive Vice President.* The Committee reviewed the report of the Executive Vice President. We feel our Executive Vice President has represented well the physicians of the State of Arkansas and commend his efforts.

Mr. Speaker, I move that this report be received for the information of the House of Delegates. There being no objection, the Speaker so ordered.

7. *Report of the State Medical Board.* The Reference Committee reviewed the report of the Arkansas State Medical Board and we feel that their job has been done very satisfactorily.

Mr. Speaker, we move the adoption of the report. There being no objection, the Speaker so ordered.

8. *Resolution Number One (Casualty Insurance).* The Committee heard extensive statements from members of the Society concerning this resolution, the basic problem being the improper application forms. Mr. Speaker, we move that this resolution be adopted, and amended so that a committee be appointed to work with the



The officers of the Arkansas Medical Society for 1967-1968. Front row, left to right: Secretary Elvin Shuffield, First Vice President Jerome Levy, Chairman of the Council T. E. Townsend, President Joseph A. Norton, President-elect H. W. Thomas, Immediate Past President L. A. Whittaker, Speaker J. P. Price, Vice Speaker Amail Chudy; (standing, left to right) Councilors Eldon Fairley, L. J. Pat Bell, Carlton Kemp, James R. Morrison, John Wood, C. C. Long, Hugh R. Edwards, Lee B. Parker, Jack W. Kennedy, Kenneth R. Duzan, Ross Fowler, A. S. Koenig, Paul Sizemore, B. P. Raney, Paul Gray, Past President C. R. Ellis, and Councilor W. Payton Kolb. Not present were Treasurer Ben N. Saltzman, Councilors Paul Millar, Robert McCrary and Stanley Applegate.

casualty companies, the physicians of the State of Arkansas and the Traffic Safety Committee of the State Medical Society to provide a satisfactory solution to the problem. There being no objection to the adoption of the Committee's recommendation, the Speaker so ordered.

**9. Resolution Number Two (Wilbur J. Cohen).** The Reference Committee studied very carefully the resolution from the Union County Medical Society concerning Wilbur J. Cohen. Legal opinion was given to the Committee by Mr. Eugene Warren, who felt that passing this resolution would not be in the Society's interest.

Mr. Speaker, we, therefore, recommend that this resolution not be adopted. There being no objection, the Speaker so ordered.

**10. Resolution Number Three (Full Payment**

*of Usual Physician's Fee by Blue Cross-Blue Shield).* This resolution was submitted to the Reference Committee from the Onaohita County Medical Society. There was much discussion from the floor concerning this resolution. Blue Cross stated that they have a committee of doctors which has been studying up-grading of the fees, but at the present time has made no definite commitments.

Mr. Speaker, we, therefore, recommend that this resolution be adopted and amended to the effect that a proper liaison committee from the Arkansas Medical Society function with the committee from Blue Cross to approach the usual, customary and reasonable physician's fees in the State of Arkansas. There being no objection, the Speaker so ruled.

**11. Resolution Number Four (Non-Participating Physicians, Blue Shield).** The Reference Committee heard heated debate concerning this resolution. It seemed to us that the debate revealed greater problems than this resolution stated. Your Reference Committee finds the focus of this problem not in the participating physician agreement, but in the subscriber contract where it is specified that payment of only 75% of the claim fee will be paid to patients of non-participating physicians. We recommend that the subscriber not be penalized for an action on the part of his physician and recommend that Arkansas Blue Cross-Blue Shield, Inc., change their subscriber contract to pay 100% of the claim fee regardless of whether their physician is participating or not.

Mr. Speaker, we, therefore, recommend that this resolution be amended as above and adopted. There being no objection, the Speaker so ordered.

**12. Resolution Number Five (Life Membership).** The Reference Committee heard the resolution from the Pulaski County Medical Society concerning the status of a life membership.

Mr. Speaker, we feel this resolution should not be adopted at this time and refer it to the Executive Vice President's office for a survey of the economic feasibility.

Upon the motion of F. R. Buchanan of Pulaski County, the House voted to accept the Reference Committee's recommendation with the amendment that the matter be referred back to the House of Delegates at the 1968 convention.

**13. Resolution Number Six (Fractional Dues).** The Reference Committee reviewed the resolution from Pulaski County concerning the payment of half dues by physicians starting their practice after July 1st.

Mr. Speaker, we feel that the Arkansas Medical Society should adjust dues as the American Medical Association does, and, therefore, request this resolution be adopted. There being no objection, the Speaker so ordered.

**14. Resolution Number Seven (Constitutional Changes Governing Deliberations of House) (Constitutional Revisions Committee).** The Reference Committee reviewed the proposed constitutional changes and feels that in all fairness to all members of the Society, and particularly to the members of the House of Delegates who have the responsibility of governing matters of our Society, they should be made aware at all times of busi-

ness to be brought before the House of Delegates.

We do recommend that this resolution be amended as follows:

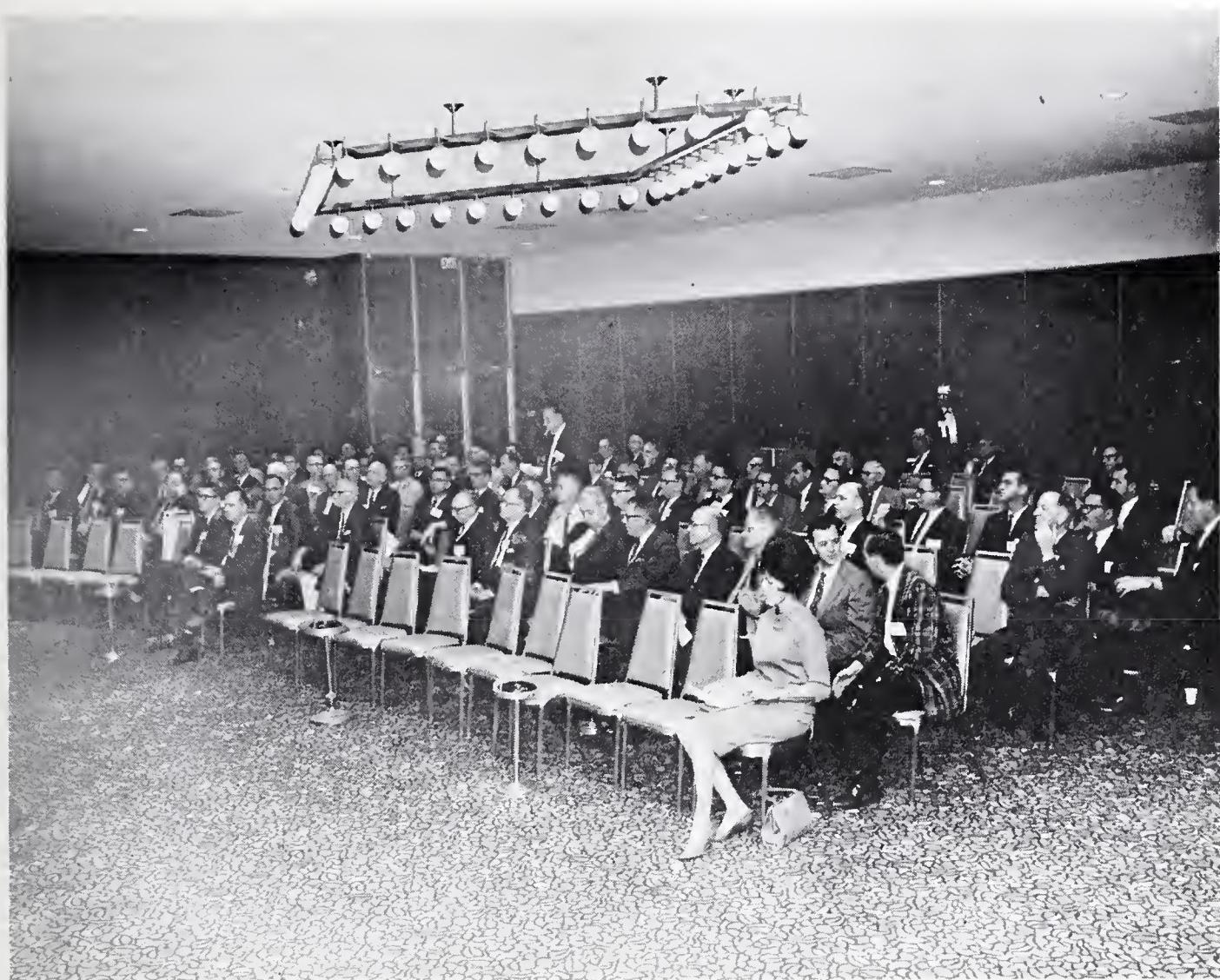
- (1) to add the following sentence at the end of the sentence ending with the phrase "in the month preceding the annual meeting":  
"All resolutions to be submitted to the House of Delegates at the Annual Meeting must be received in the office of the Executive Vice President twenty days prior to said meeting".
- (2) to add the word "attending" after the words "two-thirds majority of the" and delete the words "present and" following the word "delegates", and
- (3) substitute "two-thirds" for the word "unanimous" and the word "attending" for the word "those" and delete the word "present", all in the last sentence, thereby making the proposed "section 2" to be added to Chapter XI read, after amended, as follows:

"All Items expected to be considered at the Annual Meeting of the House of Delegates of this Society must be printed in the Journal of this Society in the month preceding the Annual Meeting. All resolutions to be submitted to the House of Delegates at the Annual Meeting must be received in the office of the Executive Vice President twenty days prior to said meeting. Any new business proposed during the first session of the House of Delegates of this Society must have a two-thirds majority of the attending delegates voting for such introduction into this Session. Any new resolutions or other new business proposed for introduction to this House of Delegates after the first session in each Annual Meeting must have two-thirds consent of attending delegates before its introduction."

Mr. Speaker, we recommend that this constitutional change be made as amended. The Speaker ruled that the report of the Reference Committee would stand as the first reading of the proposed amendment.

**15. Resolution Number Eight (Constitutional Change Governing Business of House – Union County).** The Reference Committee recommends the adoption of the resolution of the Union County Medical Society concerning changes in the Constitution and By-Laws as amended as outlined under Item 14 above.

**16. Resolution Number Nine (Proposed Changes in the Constitution and By-Laws to**



The House of Delegates of the Arkansas Medical Society in session for the final meeting of the 1967 convention, Wednesday, May 3, 1967, Room "C", Arlington Hotel.

*create Provisional Membership).* The Reference Committee, after hearing much evidence and testimony concerning these proposed constitutional changes and after much discussion among themselves, feels that the constitutional revision concerning membership should not be adopted. We feel that every practicing physician in Arkansas should be a member of a State Society and should lend full support, both professionally and financially, to the improvement of his Society. The proposed constitutional amendments concerning provisional membership were studied very carefully by the Reference Committee. We feel that at this time the proposed change as written is incomplete and unworkable and, therefore, do not recommend the constitutional change. There being no objection, the Speaker so ordered.

**17. Fee Committee Constitutional Change.** Your Reference Committee studied the proposed

Constitutional changes regarding the establishment of a fee committee. As the fee committees have always originated from the Council, we feel the change not appropriate.

Mr. Speaker, we recommend that this proposed constitutional change not be adopted. There being no objection, the Speaker so ordered.

Mr. Speaker, this concludes the report of your Reference Committee Number Three. I wish to thank those who appeared before this Reference Committee and my fellow members on the Committee.

Upon the motion of Paul Gray and James M. Kolb, the House voted to approve the report as a whole, as amended.

C. R. Ellis requested clarification as to whether or not a physician could be a member of a component society without belonging to the State Society. He was advised that when a physician

is accepted for membership in the county society he automatically becomes a member of the State Society.

Dr. Lee Parker, chairman of Reference Committee Number Two, presented the following report:

### **REPORT OF REFERENCE COMMITTEE NUMBER TWO**

LEE B. PARKER, *Chairman*

Mr. Speaker and members of the House of Delegates: Reference Committee Number Two considered the following items and makes the following report:

1. Report of the Sub-Committee on Traffic Safety. The Committee recommends this report be received for the information of the House of Delegates. There being no objection, the Speaker so ruled.

2. Report of the Sub-Committee on State Health and Medical Resources for Civil Defense. This Committee recommends that this report be received for the information of the House of Delegates. There being no objection, the Speaker so ruled.

3. Report of the Medicare Fee Committee. This Committee recommends that this report be received for the information of the House of Delegates. There being no objection, the Speaker so ruled.

4. Report of Medical Advisory Committee, Selective Service. This Committee recommends that this report be received for the information of the House of Delegates.

There being no objection, the Speaker so ruled.

5. Report of the Twenty-One Man Committee. This Committee recommends that this report be received for the information of the House of Delegates. There being no objection, the Speaker so ruled.

6. Report of the Immunization Sub-Committee. The Reference Committee would like to commend this Committee for its continued efforts in this area. The Committee would also recommend that the County Medical Societies establish closer liaison with the county health departments to co-ordinate any immunization program to be conducted by the department. County societies might wish to set up a Sabin-type of program for their county.

Mr. Speaker, we move the adoption of this report. There being no objection, the Speaker so ruled.

7. Report of the Budget Committee. Mr. Speaker, this Committee moves the adoption of this report. There being no objection, the Speaker so ruled.

8. Report of the Council. Two of the resolutions were concerned in some degree with activities of the Council. These were the American Medical Association Disability Insurance Program and the Fee Schedule in dealing with various State agencies.

Mr. Speaker, we move the report of the Council be approved except where these two items are concerned. So ordered.

#### 9. Resolutions.

(A) Pulaski County proposed changes in membership dues. This resolution was discussed. The Committee felt that any action would require a change in the Constitution and, after consultation with the Speaker, this resolution was referred to Reference Committee Number Three, which was handling proposed constitutional revisions.

(B) Garland County proposal regarding AMA Disability Insurance

The resolution by the Garland County Medical Society

with reference to instructing the State Society's delegates to vote for a change in the American Medical Association insurance carriers and thereby maintaining the same disability policy as is now in force. After some discussion, it was the Reference Committee's opinion that too little information was available to so bind our delegates and, therefore, we recommend approval of the Council's action in allowing the American Medical Association delegates to go uninstructed in this matter, for the AMA delegates to study the proposals and to vote for the proposal which would best serve the needs and desires of the Arkansas Medical Society members.

Mr. Speaker, we move that this resolution be defeated. So ordered.

(C) Pulaski County regarding care of medically indigent Resolution of the Pulaski County Medical Society that the State Society recommend that all agencies concerned with care of the medically indigent should pay usual and customary fees for services rendered. The Committee recommends the adoption of this resolution with the following revisions:

- (1) In paragraph seven, change the word "pledge" to the word "urge"
- (2) Also in paragraph 7, end the paragraph after the words "compensation to physicians", thereby deleting the remainder of the paragraph. This would make this paragraph read:

"AND BE IT FURTHER RESOLVED that the Arkansas Medical Society urge its members to continue to offer their services for care of the medically indigent when no funds for compensation are available, providing the aforementioned recommendations are implemented by those agencies of the State of Arkansas to assure equitable compensation to physicians".

Mr. Speaker, we move the adoption of this resolution as amended. So ordered.

Mr. Speaker, this concludes the report of Reference Committee Number Two. I move adoption of the report in its entirety. The House voted its approval.

The chairman of Reference Committee Number One, George K. Mitchell, presented the following report for his Committee.

### **REPORT OF REFERENCE COMMITTEE NUMBER ONE**

GEORGE K. MITCHELL, *Chairman*

Mr. Speaker and members of the House of Delegates:

Your Reference Committee met in the Mercury Room of the Arlington Hotel at 3:30 P.M. on April 30, 1967.

Members of the Committee present were Dr. George K. Mitchell, Chairman, and Dr. E. C. Gresham. In the absence of Dr. Edward M. Cooper, the Speaker appointed Dr. Bill G. Floyd. President L. A. Whittaker and President-elect Joseph A. Norton were also present.

Your Reference Committee gave careful consideration to the items referred to it and makes the following report:

#### Item 1. *Committee Reports Without Recommendations*

The reports of the following committees were brought up for discussion:

- (a) Sub-Committee on Rural Health
- (b) Sub-Committee on Physical Fitness and School Health
- (c) Sub-Committee on Mental Health
- (d) Annual Session Committee
- (e) Sub-Committee on Liaison with the Nursing Profession
- (f) Fourth Councilor District Professional Relations Committee
- (g) Sixth Councilor District Professional Relations Committee

## PROCEEDINGS

- (h) Eighth Councilor District Professional Relations Committee
- (i) Ninth Councilor District Professional Relations Committee

Mr. Speaker, Reference Committee No. 1 suggests that the chairman and members of these committees be commended for their work, and I move that these reports be accepted as written.

*Item 2. Report of the Committee on Medicine and Religion:*

The published report was considered and additional suggestions were heard from outgoing chairman, president-elect Norton, and incoming chairman Jerome Levy. Dr. Norton suggested that appropriate steps be taken to establish a post graduate course on Medicine and Religion at the University of Arkansas Medical Center. Dr. Levy commented on the wide-spread interest and acceptance of Medicine and Religion projects and programs nationally, and urged all physicians to cooperate with the functions of this committee in the various councilor districts.

Mr. Speaker, Reference Committee 1 suggests that this committee be commended for its work and I move the approval as written, along with the additional suggestions as noted. So ordered.

*Item 3. Report of the Sub-Committee on Tuberculosis*

There was considerable discussion of this report. The Sub-Committee had met to review the report resulting from a study of tuberculosis control in Arkansas by Karl H. Pfuetze, M.D., and John B. Stocklen, M.D. This study was financed by the Arkansas Tuberculosis Association and co-sponsored, among others, by the Arkansas Medical Society. The Sub-Committee on Tuberculosis submitted recommendations based on, but not always identical with various recommendations of the consultants' study and report.

Your reference committee would like to preface its remarks on the body of the report by commenting on the poor attendance of the Sub-Committee meeting by its members at Booneville on April 1, 1967. Your Reference Committee also felt that it was regrettable that the report of the Sub-Committee on Tuberculosis had not been made available for general distribution and study to all interested delegates. The functions of the sub-committee on Tuberculosis and more specifically, the study report in question, are of considerable magnitude and importance to the profession and public in general. Therefore, your reference committee felt that any such committee should operate with balanced representation by members who can serve and contribute their valued time and opinions in a consistent manner.

Your Reference Committee carefully considered the several recommendations as proposed by the Sub-Committee on Tuberculosis after hearing related recommendations contained in the study report.

*Recommendation No. 1*

Your Reference Committee would support the feelings of the Sub-Committee on Tuberculosis in that no change be made at the present time in the responsibilities of the respective boards of the Booneville Sanatorium and the Arkansas State Board of Health.

Your Reference Committee would further recommend that a separate advisory committee not be appointed at this time to study the conduct of the tuberculosis program in the State. The existing Sub-Committee could serve in this capacity, and it was generally felt by those at the hearing that the Medical Director of the Booneville Tuberculosis Sanatorium and the Medical Director of the State Board of Health should serve as ex-officio members on the Sub-Committee on Tuberculosis.

Mr. Speaker, I move the adoption of this recommendation as changed. So ordered.

*Recommendation No. 2*

There was little discussion of this recommendation as disposition of McRae Sanatorium is already State law.

Mr. Speaker, I move that this recommendation be accepted. So ordered.

*Recommendation No. 3*

Your Reference Committee heard no controversial discussion on this item.

Mr. Speaker, I move that recommendation No. 3 be adopted. So ordered.

*Recommendation No. 4*

Your Reference Committee heard considerable discussion on the organization of 20-30 bed units in general hospitals for the care of tuberculosis. A moderate approach with review of the function and effectiveness of such a unit by the Sub-Committee on Tuberculosis was recommended. Furthermore, such review would form a basis for encouraging or discouraging the establishment of other units.

In adopting newer methods of tuberculosis care, the Sub-Committee on Tuberculosis and others present favored a carefully prepared statement to be released to the news media on the present concept of the communicability of tuberculosis. Your Reference Committee had some reservations in this regard but would recommend its approval so long as the statement is prepared by the Sub-Committee on Tuberculosis with Council approval. Your Reference Committee also feels that there should be no deviation from the prepared news release and printed copy, thus avoiding misunderstanding and misrepresentation of the Stated concepts.

Mr. Speaker, I move the adoption of this recommendation. So ordered.

*Recommendation No. 5*

There was no significant discussion or disagreement on this item.

Mr. Speaker, I move the adoption of this recommendation. So ordered.

*Recommendation No. 6*

The Sub-Committee recommended that the Arkansas Tuberculosis Sanatorium expand its services to include treatable, chronic chest diseases which are medically indigent and referred to the Sanatorium by their physician when there are beds available and not in use for treatment of tuberculosis.

Your Reference Committee observed that this recommendation was not presented by the study report of Dr. Karl H. Pfuetze and Dr. John B. Stocklen. Therefore, your Reference Committee would favor a substitute recommendation to read as follows:

That a study of the feasibility and necessity of expanding the services at the Arkansas Tuberculosis Sanatorium be made by the Sub-Committee on Tuberculosis, in order to justify such a change in the character of the Sanatorium.

Mr. Speaker, I move the adoption of this recommendation. So ordered.

Mr. Speaker, I move the adoption of the complete Reference Committee report in its entirety.

Mr. Speaker, I wish to thank those who appeared before this Reference Committee, my fellow members on the committee and those members of the staff who kindly assisted us.

The House voted to adopt the report of Reference Committee Number One as presented.

The Speaker then called for the supplementary report of the Council covering meetings held during the convention. The following report was given by H. W. Thomas, Chairman of the Council:

## BENTON

Population 15,000. 38-year-old GP moving to Tulsa about July or August, 1967, is interested in selling established practice. Modern office near 65-bed hospital. Grossed \$55,000 and netted \$36,000 last year. Will sell with or without equipment. Terms can be arranged.

Contact Don Loveless, M.D., P.O. Box 399, Benton, Arkansas 72015.

Position in student health service. Prefer GP under forty who desires a career in student health service. Contact: Arkansas Medical Society, Post Office Box 1208, Fort Smith, Arkansas 72901.

## Tandearil® oxyphenbutazone

*Therapeutic Effects:* Tandearil is a nonhormonal compound which may rapidly resolve inflammation and help restore normal joint function. Its action does not affect pituitary-adrenal function or impair immune responses. Its value in osteoarthritis is especially noteworthy because this disorder responds inconsistently to steroids and is often resistant to salicylates. Further, indomethacin is limited only to osteoarthritis of the hip, whereas oxyphenbutazone is effective in all forms of the disease.

*Contraindications:* Edema; danger of cardiac decompensation; history or symptoms of peptic ulcer; renal, hepatic or cardiac damage; history of drug allergy; history of blood dyscrasia. The drug should not be given when the patient is senile or when other potent drugs are given concurrently.

*Warning:* If coumarin-type anticoagulants are given simultaneously, watch for excessive increase in prothrombin time. Pyrazole compounds may potentiate the pharmacologic action of sulfonylurea, sulfonamide-type agents and insulin. Carefully observe patients receiving such therapy. Use with great caution in the first trimester of pregnancy.

*Precautions:* Obtain a detailed history and a complete physical and laboratory examination, including a blood count. The patient should be closely supervised and should be warned to report immediately fever, sore throat, or mouth lesions (symptoms of blood dyscrasia); sudden weight gain (water retention); skin reactions; black or tarry stools or other evidence of intestinal hemorrhage. Make regular blood counts. Discontinue the drug and institute countermeasures if the white count changes significantly, granulocytes decrease, or immature forms appear. Use greater care in the elderly and in hypertensives.

*Adverse Reactions:* The most common are nausea, edema and drug rash. The drug has been associated with peptic ulcer and may reactivate a latent peptic ulcer. Infrequently, agranulocytosis, or a generalized allergic reaction may occur and require withdrawal of medication. Stomatitis, salivary gland enlargement, vomiting, vertigo and languor may occur. Leukemia and leukemoid reactions have been reported but cannot definitely be attributed to the drug. Thrombocytopenic purpura and aplastic anemia may occur. Confusional states, agitation, headache, blurred vision, optic neuritis and transient hearing loss have been reported, as have hyperglycemia, hepatitis, jaundice, and several cases of anuria and hematuria. With long-term use, reversible thyroid hyperplasia may occur infrequently. Moderate lowering of the red cell count due to hemodilution may occur.

*Dosage in Osteoarthritis:* The initial daily dosage in adults is 300-600 mg. in divided daily doses. When improvement occurs, dosage should be decreased to the minimum effective level; this should not exceed 400 mg. daily, and is often achieved with only 100-200 mg. daily.

For complete details, please refer to full prescribing information.  
6562-VI(B)R

*Availability:* Tablets of 100 mg.



Geigy Pharmaceuticals  
Division of Geigy Chemical Corporation  
Ardsley, New York



*"When I couldn't even smell corned beef and cabbage,  
I decided it was time for you, Doc."*

Maybe he doesn't know when he's well off. But you might want to prescribe long-acting Novahistine LP anyway.

Two tablets in the morning and two in the evening will usually provide day and night relief by helping to clear congested air passages for normal, free breathing. Novahistine LP is formulated to provide continuous therapeutic effect for 8 to 12 hours. The decongestant ingredients help restore normal mucus secretion and ciliary activity—physiologic defenses against infection of the respiratory tract.

Use cautiously in individuals with severe hypertension, diabetes mellitus, hyperthyroidism or urinary retention. Caution ambulatory patients that drowsiness may result. Each Novahistine LP tablet contains: phenylephrine hydrochloride, 25 mg., and chlorpheniramine maleate, 4 mg.

**NOVAHISTINE® LP**



**PITMAN-MOORE** Division of The Dow Chemical Company, Indianapolis

**SUPPLEMENTARY REPORT OF THE COUNCIL**

The Council met on Sunday, April 30th, and transacted business as follows:

1. Adopted the following resolution regarding the late Dr. Louis Hundley, past president and past chairman of the Council:

**RESOLUTION RE: DR. LOUIS K. HUNDLEY**

The Arkansas Medical Society, in its 91st Convention assembled, marks with great sorrow the passing on December 23, 1966 of Dr. Louis K. Hundley.

He was a graduate of the University of Arkansas Medical School and a medical officer in the Southwest Pacific during World War II.

Dr. Hundley served as a member of and a leader in the Jefferson County Medical Society in many capacities. His willingness to serve and his integrity elevated him to the most responsible positions in the Arkansas Medical Society. His service as chairman of the Council of the Arkansas Medical Society, and then as president of the Society, was distinguished.

His service to his community was exemplified by his membership in the Rotary Club, where he was elected president and finally District Governor. He gave his time and talents to many charitable, religious and scientific undertakings.

Dr. Hundley served the people of Arkansas and the medical profession with skill, diplomacy and humility. His accomplishments, always in the interest of others, were achieved at great sacrifice of his time and strength.

His leadership and dedication to his profession will be missed by his friends and colleagues.

Therefore, be it hereby resolved, that the Arkansas Medical Society express to the family of Dr. Hundley its grief and sense of loss upon the passing of our revered and honored friend.

Be it further resolved that this resolution be spread upon the minutes of the Arkansas Medical Society and published in the Journal of the Arkansas Medical Society.

2. Approved dues exemption for Affiliate and Life members as follows:

**RETIREMENT**

Cal D. Gunter	Benton
H. K. Carrington	Columbia
E. J. Chaffin	St. Francis
J. H. Downs	Faulkner
Win. L. McNamara	Pope-Yell
C. R. Walton	Saline
Morgan C. Berry	Hot Spring

Paul H. Jeffery	Independence
Howard A. Rands	Desa
Wm. K. Bell	Craighead-Poinsett
H. L. Boyer	Lincoln
W. F. Adams	Sebastian
Philip ReMine	Sebastian
Thomas N. Black	Garland
Howell Brewer	Garland
Jett Scott	Garland
E. J. Brown	Scott
R. M. Blakely	Pulaski
Martha M. Brown	Pulaski
James D. Hayes	Pulaski
Harold N. Miller	Pulaski
James M. Nisbett	Pulaski
Grady W. Reagan	Pulaski
N. W. Riegler, Sr.	Pulaski
Frances C. Rothert	Pulaski
A. M. Washburn	Pulaski
Glen M. Holmes	Pulaski

**DISABLED**

Harry E. McEntire	Lonoke
Virgil L. Payne	Jefferson
Evelyn R. Jones	Franklin
Hunter C. Sims, Sr.	Mississippi
Calvin A. Churchill	Independence
Daniel H. Autry	Pulaski
S. T. W. Cull	Pulaski
Bryce Cummins	Pulaski
H. H. Holt	Howard-Pike

**RESIDENCY TRAINING**

H. Scott McMahan	Dallas
James R. Callaway	Johnson
Wm. F. Hayden	St. Francis
A. E. Andrews	Greene-Clay
A. F. Isele	Greene-Clay
James B. Files	Mississippi
Warren M. Douglas	Craighead-Poinsett
Orval E. Riggs	Craighead-Poinsett
Wayne Reynolds	Saline
Win. A. Woodcock	Garland
A. J. Yates	Garland
John V. Busby	Pulaski
W. R. Oglesby	Pulaski

**MILITARY**

Donald Weaver	Benton
Banks Blackwell	Jefferson
J. F. Farmer	Independence
C. J. Little	Crittenden
James Robinette	Craighead-Poinsett

**LIFE MEMBERSHIP**

Mac McLendon (50 years of practice)	Lee
J. B. Hesterly (50 years of practice)	Nevada
A. D. Cathey (50 years of practice)	Union
F. L. Irby (over 80 and more than 50 years of practice)	Union
I. R. Johnson (50 years of practice)	Mississippi
R. L. Johnson (50 years of practice)	Mississippi
R. C. Dickinson (50 years of practice)	Sevier
G. C. Coffey (50 years of practice)	Garland
Louie G. Martin (50 years of practice)	Garland
W. W. Jackson (50 years of practice)	Garland
W. H. Moreland (80 years of age)	Craighead-Poinsett

3. Reviewed and found satisfactory the system decided upon last year to rotate host responsibilities for the annual convention among the councilor districts in numerical order. The host district for the 1968 meeting will be the first councilor district, Dr. Eldon Fairley and Dr. B. P. Raney, councilors.
4. Nominated Dr. Robert McDonald of Pine Bluff and Dr. John Walter Jones of Texarkana for selection by the Governor for a vacancy existing on the State Cancer Commission.
5. Reappointed Dr. Jean Gladden of Harrison to the Board of Trustees of the Medical Education Foundation for Arkansas.
6. Nominated Dr. A. S. Koenig to succeed himself on the Board of Trustees of Arkansas Blue Cross-Blue Shield.
7. Nominated Dr. Alan Cazort of Little Rock and Dr. George Talbot of Pine Bluff to succeed themselves on the Arkansas State Arbitration Commission.
8. Voted to recommend to the House of Delegates that the coverage for the Society-approved Blue Cross-Blue Shield plan for members be increased as follows:

*Basic Blue Cross-Blue Shield Program:*

**PRESENT:**

Blue Cross—\$50 deductible, \$14 room, 120 days  
 Blue Shield—\$200 surgical fee schedule, \$20 anesthesia payment, in-hospital medical visits at \$3 per day beginning with the fourth day and limited to 117 days.

**Monthly rates: Basic Blue Cross-Blue Shield**

Individual	\$ 7.90
Family	16.80

**AS REVISED:**

Blue Cross—\$100 deductible, \$25 room, 120 days

Blue Shield—\$300 surgical schedule, Plan A anesthesia schedule (scaled in accordance with the surgical schedule), in-hospital medical visits at \$4 per day beginning with the fourth day.

**Monthly rates: Basic Blue Cross-Blue Shield**

Individual	\$ 8.75
Family	19.40

***Major Medical***

**Benefits—Present program with no limit on hospital room allowance**

- |                               |         |
|-------------------------------|---------|
| Monthly rates (Major Medical) |         |
| Individual                    | \$ 1.50 |
| Family                        | 3.10    |
9. Drs. Whittaker, Norton, Shuffield and Thomas reviewed the current status of meetings between the Liaison Committee and the Welfare Department. The Council heard with satisfaction that the Executive Committee had been able to persuade the Welfare Commissioner and the Governor to agree to paying usual and customary fees for welfare patients. The Welfare Commissioner stated that the doctors of Arkansas had subsidized the welfare department in excess of twenty million dollars since the inception of the Welfare Program in the 1930's. He acknowledged that it was inequitable for doctors to be expected to continue to treat welfare patients without reimbursement while all other welfare department suppliers are being paid. The Executive Committee reported that the Welfare Department plans to begin paying regular and customary fees for treatments given after July 1st of this year.
  10. Heard Dr. Ellis, chairman of the Constitutional Revisions Committee, report that no Constitutional action is required to combine the various fee committees of the Society in one committee.
- The Council met on May 1st and transacted the following business:
1. Heard Mr. Robert Miller of the Continental Casualty Company explain the background on the dispute on the AMA Disability Insurance Program;
  2. Discussed a proposed regulation by the Internal Revenue Service removing the tax exemption from income from advertising in scientific journals such as the Journal of the Arkansas Medical Society. Upon the motion of Townsend and Whittaker, the Council voted to send a delegation to confer with Mr. Wilbur Mills to urge passage of House Bill 8765 by Mr. Watts of Kentucky which would, by legislative action, specifically insure the tax exemption for such publications as the Journal of the Arkansas Medical Society, the National Geographic, the Journal of the American Medical Association, and others.
  3. Upon the motion of Fowler, approved a plan submitted by the Auxiliary under which the

Auxiliary will ask each county medical society to collect auxiliary dues at the time county medical society dues are collected.

4. Heard a discussion of the problems connected with medical care in nursing homes in Ashley County and of the area. The Council voted to ask Dr. Gresham of Crossett to write to the Arkansas Medical Society Committee on Hospitals outlining his problem and requesting help in working out a solution.

The Council met on May 2nd and transacted the following business:

1. Directed Dr. Norton, Dr. Hayes, and Mr. Schaefer to check on the possibility of changing the plans for the 1968 meeting so that the Society could again avail itself of the excellent new facilities in Hot Springs.
2. Voted to eliminate the various fee committees of the Society and to reconstitute a single committee to consider the fee negotiations for the Society. The fee committee is to be appointed by the Executive Committee of the Council.
3. Voted to obtain and maintain a membership in the Town Club of Fort Smith.
4. Adopted the following resolutions:

#### **RESOLUTION NO. 1**

**SUBJECT:** "Social Security Amendments of 1967" H.R. 5710

WHEREAS, the National Administration has proposed to include into Medicare (Title XVIII of P.L. 89-97) the disabled and

WHEREAS, such inclusion would be extended to approximately 1.5 million people and

WHEREAS, the benefit payments under this proposal as estimated by H.E.W. are expected to be \$225 million under the Hospital Insurance Program (Part A) and \$100 million under the Medical Insurance program (Part B) and

WHEREAS, Those "disabled" persons who need financial assistance to meet current health care costs are eligible for the benefits under Title XIX and such benefits may be utilized therefore and

WHEREAS, Medicare was intended to provide assistance to those persons who had reached the age of 65 and

WHEREAS, If Section 125 is adopted, it could change the direction of Medicare from a program for older persons to one aimed at various select categories, now therefore be it

**RESOLVED:** That the Arkansas Medical So-

cietty supports financial assistance under Title XIX of P.L. 89-97 for those "disabled" persons who may currently need such assistance to meet health care costs and be it further

**RESOLVED:** That the Arkansas Medical Society strongly opposes the expansion of Title XVIII (Medicare) to include the "disabled", and be it further

**RESOLVED:** That this resolution be sent to each member of the Arkansas Congressional delegation urging that they oppose such expansion of Medicare (Title XVIII) particularly since Title XIX of P.L. 89-97 is available for those disabled who have difficulty in meeting their health care costs.

#### **RESOLUTION NO. 2**

**SUBJECT:** "Social Security Amendments of 1967" H.R. 5710

WHEREAS, Charles L. Hudson, M.D., President of the American Medical Association, testified before the Committee on Ways and Means of the United States House of Representatives on the "Social Security Amendments of 1967" H.R. 5710 on April 4, 1967, and

WHEREAS, Doctor Hudson recommended amendments and especially urged the adoption of four (4) amendments to Title XVIII and five (5) amendments to Title XIX of P.L. 89-97, and

WHEREAS, the Ways and Means Committee is now considering H.R. 5710 and

WHEREAS, these amendments will, among other things, eliminate mandatory "vendor payments" in Title XIX and

WHEREAS, these amendments are vitally needed to correct major defects in Titles XVIII and XIX and are needed to make the law more workable, now therefore be it

**RESOLVED:** that the Arkansas Medical Society does strongly support each of these amendments and be it further

**RESOLVED:** That the Society urge its members, except those in the Second Congressional District, to forthwith write their own congressman requesting that he contact Congressman Wilbur Mills from the Second District, who is chairman of the House Ways and Means Committee and urge him to strongly support the proposed AMA amendments and to have them incorporated into the Committee's Bill and be it further

**RESOLVED:** That the members of the Second Congressional District write Congressman Mills urging him to strongly support said amendments and to urge their adoption by the Committee and be it further

**RESOLVED:** That a copy of this Resolution be forwarded to every member of the Arkansas Medical Society.

5. Heard a stirring plea by Dr. Verser and Dr. Norton on behalf of Ark-Pac, whereupon the members of the Council signed up as members of Ark-Pac and gave their \$35 checks for family membership in the organization.
6. Dr. Norton announced plans for a "Know Your Government" program in Little Rock in the near future for all members of the Arkansas Medical Society and their wives. Dr. Norton plans to have Congressman Mills, Congressman David Pryor, Congressman John Paul Hammerschmidt and Governor Rockefeller as participants in the meeting. All members are urged to watch for the announcements of the meeting.

The Council met on Wednesday, May 3, 1967, and transacted the following business:

1. Voted to recommend to the House of Delegates that the Society cancel its plans to meet in Little Rock in 1968 and return to the Arlington Hotel in Hot Springs for the 1968 annual meeting.
2. Adopted the following resolutions of appreciation:

#### **RESOLUTION OF APPRECIATION**

WHEREAS, the 91st Annual Session of the Arkansas Medical Society, just completed in Hot Springs, has been an outstanding success, and

WHEREAS, the management of the Arlington Hotel has facilitated our efforts in every way in providing meeting rooms, projection equipment, and otherwise assisting in arrangements for our meeting, and

WHEREAS, the Tenth Councilor District Medical Society, and the individual members thereof, and the Auxiliary, have been gracious hosts, and have contributed greatly to our enjoyment, and

WHEREAS, the management of the Belvedere Country Club has been most generous in making its golf course available for the golf tournament, and

WHEREAS, the guest speakers have added greatly to the worth of our meeting, and we have benefited from the lessons which they have shared with us, and

WHEREAS, the hours of thought devoted by the Committee on Arrangements for the Annual Session have been greatly rewarding, and have borne fruit in a program of outstanding worth, and

WHEREAS, study and other effort was given by our scientific exhibitors and the Aesculapius Award was furnished by the Mead Johnson Laboratories, resulting in exhibits that have been instructive, and were greatly enjoyed, and

WHEREAS, the commercial exhibitors were of great benefit to our gatherings and the courteous and careful attention of the attendants was quite helpful,

NOW, THEREFORE, BE IT RESOLVED that the Arkansas Medical Society records its sincere appreciation, and expresses its heartfelt thanks to our host city, and these heretofore mentioned, for the cordial welcomes, the extension of unbounded hospitality, the expression of good will and kindly feelings shown each member of the Society, who has been privileged to attend this session. We shall ever hold in pleasant memory the hours spent as their guests during the last several days.

#### **RESOLUTION OF APPRECIATION: NEWS MEDIA**

WHEREAS, the 91st Annual Session of the Arkansas Medical Society, just completed in Hot Springs, has been an outstanding success, and

WHEREAS, the Hot Springs Sentinel-Record, the Arkansas Gazette, the Arkansas Democrat, and other news media, have made available to the Medical Society extended coverage of its meetings,

NOW, THEREFORE BE IT RESOLVED, that the House of Delegates express its thanks for the Medical Society to the news media.

#### **RESOLUTION RE: MEDICAL ASSISTANTS**

WHEREAS, the Arkansas State Medical Assistants Society has been most kind and generous in serving coffee and doughnuts to the members and guests attending the 91st Annual Session of the Arkansas Medical Society, and

WHEREAS, the coffee bar has added much to

the success of the meeting, and

WHEREAS, the medical assistants have demonstrated their support and dedication to the purposes of organized medicine,

NOW, THEREFORE, BE IT RESOLVED that the House of Delegates of the Arkansas Medical Society express its thanks and appreciation to the Medical Assistants Society and to its representatives who have been so gracious to us during the last several days.

3. Instructed the Executive Vice President to explore the possibilities of obtaining improved coverage by the news media for future annual sessions.

Chairman Thomas moved the adoption of the supplementary report of the Council.

The House voted to accept the report as presented.

The Chairman of Reference Committee Number Two, Lee B. Parker, requested the floor to make an addendum to his reference committee report concerning the Supplementary Report of the Council. At its meeting on April 9th, the Council "voted to approve and refer to the House of Delegates a suggestion that the State Board of Health be loaned \$10,000 by the Medical Society on a ninety-day basis for the purpose of making emergency repairs to fire-damaged equipment". Dr. Parker advised that the Reference Committee had been informed the loan was not needed by the State Board of Health. This item of the Council report was withdrawn from consideration by the Reference Committee and no action in this regard is required by the House. The Speaker ruled that this would be accepted as a point of information with no action to be taken by the House.

Dr. James L. Smith of Pulaski County proposed the adoption of the following resolutions:

#### **RESOLUTION OF APPRECIATION: DR. MORRISS HENRY**

WHEREAS, it has now been proven that the para-medical cult groups of Arkansas are making real efforts to encroach on the field of medicine and

WHEREAS, one of our members, Dr. Morriess Henry of Fayetteville, has taken up the challenge and has sacrificially entered politics and has served us well and

WHEREAS, he has been instrumental in stop-

ping some legislation proposed by one such groups, and

WHEREAS, we do appreciate his actions

NOW, THEREFORE, BE IT RESOLVED that House of Delegates go on record thanking Dr. Henry and asking any other physician in Arkansas who will make the sacrifice to study and work for the pleasure of being a representative or senator to, by all means, now start on such course, for organized medicine needs help sorely in the halls of the Arkansas Legislature.

#### **RESOLUTION OF APPRECIATION: DR. ELVIN SHUFFIELD**

WHEREAS, the Arkansas Medical Society is or should be aware of the tremendously good job that Dr. Elvin Shuffield is doing and has done in his sacrificial job for us as liaison member to the Arkansas Legislature, and

WHEREAS, Dr. Shuffield has given of his time unselfishly to help us all, and

WHEREAS, we all must realize that the para-medical cult groups are and have made a tremendous effort to encroach on the field of medical practice to the severe detriment to the health of the Arkansas public, and

WHEREAS, as we must now surely support and rally to the protection of the public health in which ever quarter it be attacked,

BE IT THEREFORE RESOLVED that this House of Delegates of the Arkansas Medical Society pledge its support and gratitude to Dr. Shuffield in his continuing effort in our behalf.

Both resolutions were unanimously approved by the House.

The Speaker presented the names of nominees for board vacancies as follows:

*Arkansas State Medical Board, 6th Congressional District:* Dr. Frank Burton, Hot Springs. Upon motion of Karlton Kemp, the House unanimously voted to approve the nomination.

*Arkansas State Board of Health, 3rd Congressional District:*

Dr. John W. Dorman, Springdale  
Dr. L. A. Whittaker, Fort Smith  
Dr. J. Warren Murry, Fayetteville

Upon the motion of C. C. Long, the House unanimously voted to approve the nominations.

*Arkansas State Board of Health, 6th Congressional District:*

Dr. C. Lewis Hyatt, Monticello

## PROCEEDINGS

Dr. Cecil Parkerson, Hot Springs

Dr. Guy U. Robinson, Dumas

Upon the motion of George F. Wynne, the House unanimously voted to approve the nominations.  
*Arkansas State Board of Health, 4th Congressional District:*

Dr. Warren S. Riley, El Dorado

Dr. Bruce Ellis, Stephens

Dr. Dallas Miles, Warren

Upon the motion of Karlton Kemp, the House unanimously voted to approve the nominations.

The Speaker announced that the chair would consider a motion concerning the location for the 1969 meeting of the Society. Upon the motion of George Wynne, the House voted to meet in Hot Springs in 1969 at a time selected in accordance with the provisions of the Constitution.

The meeting adjourned at 12:10 P.M.

## REORGANIZATIONAL MEETING OF THE COUNCIL

Immediately following adjournment of the House of Delegates, the Council held a brief meeting to reorganize. Dr. Thomas E. Townsend of Pine Bluff was elected chairman of the Council and Dr. Alfred Kahn was re-elected to the position of editor of the Journal.

## REGISTRATION

Physicians	478
Exhibitors	121
Medical Students	7
Other Medical Personnel	16
Guests	25
Auxiliary	143
	—
Total	790

## OFFICERS OF THE ARKANSAS MEDICAL SOCIETY 1967-1968

President	Joseph A. Norton, 8570 Cantrell Road, Little Rock 72207
President-elect	H. W. Thomas, 105 North Freeman, Dermott 71638
First Vice President	Jerome Levy, 500 South University, Little Rock 72205
Second Vice President	David H. Pontius, 300 South Rhodes, West Memphis 72301
Third Vice President	George F. Wynne, 113 West Cypress, Warren 71671
Secretary	Elvin Shuffield, 1000 Wolfe, Little Rock 72202
Secretary Emeritus	W. R. Brooksher, Box 3488, Station A, Fort Smith 72901
Treasurer	Ben N. Saltzman, 126 West Sixth, Mountain Home 72653
Speaker, House of Delegates	John P. Price, 216 South Main, Monticello 71655
Vice Speaker of House	Amial Chudy, 1801 Maple, North Little Rock 72114
Journal Editor	Alfred Kahn, Jr., 1300 West Sixth, Little Rock 72201
Delegates to AMA	James M. Kolb, Sr., Box 472, Clarksville 72830 Jack Kennedy, 1008 Pine, Arkadelphia 71923
Alternate Delegates to AMA	C. C. Long, 110 West Commercial, Ozark 72949 Alfred Kahn, Jr., 1300 West Sixth Street, Little Rock 72205
Executive Vice President	Mr. Paul C. Schaefer, P.O. Box 1208, Fort Smith 72901

## EXECUTIVE COMMITTEE OF THE COUNCIL

Chairman of the Council	T. E. Townsend, 1310 Cherry, Pine Bluff 71601
President	Joseph A. Norton, 8570 Cantrell Road, Little Rock 72207
President-elect	H. W. Thomas, 105 North Freeman, Dermott 71638
Secretary	Elvin Shuffield, 1000 Wolfe, Little Rock 72202

**COUNCILORS**

Dis-t trict	Councilor Term Expires '68	Councilor Term Expires '69	Counties in District
1.	Bascom P. Raney 403 E. Matthews Jonesboro 72401	Eldon Fairley P.O. Box 71 Osceola 72370	Clay, Craighead, Crittenden, Fulton, Greene, Lawrence, Mississippi, Poinsett, Randolph, and Sharp
2.	Hugh R. Edwards 607 Woodruff Searcy 72143	Paul Gray P.O. Box 31 Batesville 72501	Cleburne, Conway, Faulkner, Independence, Izard, Jackson, Stone, and White
3.	L. J. P. Bell 626 Poplar Helena 72312	Panl Millar 18th & Buerkle Stuttgart 72160	Arkansas, Cross, Lee, Lonoke, Monroe, Phillips, Prairie, St. Francis, and Woodruff
4.	Lee B. Parker 101 North 2nd McGehee 71654	T. E. Townsend 1310 Cherry Pine Bluff 71601	Ashley, Chicot, Desha, Drew, Jefferson, and Lincoln
5.	Paul Sizemore 123 North Jackson Magnolia 71753	Kenneth R. Duzan 443 West Oak El Dorado 71730	Bradley, Calhoun, Cleveland, Columbia, Dallas, Ouachita, and Union
6.	John P. Wood 907 Mena Mena 71953	Karlton H. Kemp 408 Hazel Texarkana 75501	Hempstead, Howard, LaFayette, Little River, Miller, Nevada, Pike, Polk, and Sevier
7.	Robert F. McCrary Meyer Building Hot Springs 71901	Jack Kennedy 1008 Pine Arkadelphia 71923	Clark, Garland, Grant, Hot Spring, Montgomery, and Saline
8.	James Morrison St. Vincent Inf. Little Rock 72207	W. Payton Kolb 1120 Marshall Little Rock 72201	Pulaski
9.	Ross Fowler 213 W. Stephenson Harrison 72601	Stanley Applegate Springdale Clinic Springdale 72764	Baxter, Benton, Boone, Carroll, Madison, Marion, Newton, Searcy, Van Buren, and Washington
10.	A. S. Koenig 922 Lexington Fort Smith 72901	C. C. Long 110 W. Commercial Yell Ozark 72919	Crawford, Franklin, Johnson, Logan, Perry, Pope, Scott, Sebastian, and

**1967 OFFICERS — COUNTY MEDICAL SOCIETIES — ARKANSAS MEDICAL SOCIETY**

ARKANSAS	Pres.—Jerry C. Holton, 509 South Main, Stuttgart 72160 Secy.—Jerry D. Morgan, 509 South Main, Stuttgart 72160
ASHLEY	Pres.—C. E. Hicks, Hamburg Clinic, Hamburg 71646 Secy.—C. E. Ripley, Crossett Health Center, Crossett 71635
BAXTER	Pres.—Jack Wilson, 353 East 8th, Mountain Home 72653 Secy.—Ben N. Saltzman, 126 West 6th, Mountain Home 72653
BENTON	Pres.—James D. Huskins, 304 S. Maxwell, Siloam Springs 72761 Secy.—John R. Martin, 304 S. Maxwell, Siloam Springs 72761
BOONE	Pres.—Joe Bill Wilson, 520 North Spring, Harrison 72601 Secy.—G. Allen Robinson, 707 North Vine, Harrison 72601
BRADLEY	Pres.—James W. Marsh, 302 North Main, Warren 71671 Secy.—George F. Wynne, 113 West Cypress, Warren 71671
CHICOT	Pres.—James D. Harbison, Lake Village Infirmary, Lake Village 71653 Secy.—William J. Weaver, P.O. Box "Q", Eudora 71640
CLARK	Pres.—George R. Peebles, 305 East Main, Gurdon 71743 Secy.—Robert H. Nunnally, 107 North 3rd, Gurdon 71743
CLEBURNE	Pres.—James C. Barnett, 4th and Spring, Heber Springs Secy.—Michael E. Barnett, 4th and Spring, Heber Springs

PROCEEDINGS

COLUMBIA	Pres.—Evan G. Houston, 104 East Columbia, Magnolia 71753 Secy.—Charles L. Weber, 110 West North, Magnolia 71753
CONWAY	Pres.—J. J. Magie, 200 South Moose, Morrilton 72110 Secy.—T. H. Hickey, 1109 East Broadway, Morrilton 72110
CRAIGHEAD-POINSETT	Pres.—George E. Mitchell, 832 Cobb, Jonesboro 72401 Secy.—Glen F. Baker, 814 Cobb, Jonesboro 72401
CRAWFORD	Pres.—Ed G. Hopkins, 1103 Chestnut, Van Buren 72956 Secy.—Jack N. Thicksten, 164 Fayetteville, Alma 72921
CRITTENDEN	Pres.—David H. Pontius, 300 S. Rhodes, West Memphis 72301 Secy.—Keith B. Kennedy, 200 Tyler, West Memphis 72301
CROSS	Pres.—K. E. Beaton, 303 East Union, Wynne 72396 Secy.—W. G. Burks, 303 East Union, Wynne 72396
DALLAS	Pres.—E. E. Estes, 205 East Third, Fordyce 71742 Secy.—J. T. Dobson, Second and Clifton, Fordyce 71742
DESHA	Pres.—O. G. Blackwell, 135 West Waterman, Dumas 71639 Secy.—Howard R. Harris, 207 South Elm, Dumas 71639
DREW	Pres.—A. K. Busby, 816 North Hyatt, Monticello 71655 Secy.—C. Lewis Hyatt, 515 North Main, Monticello 71655
FAULKNER	Pres.—Sam V. Daniel, 574 Locust, Conway 72032 Secy.—J. H. Lyford, 919 Locust, Conway 72032
FRANKLIN	Pres.—J. Laurence Jones, 110 W. Commercial, Ozark 72949 Secy.—David L. Gibbons, Gibbons Clinic, Ozark 72949
GARLAND	Pres.—W. R. Lee, 236 Central, Hot Springs 71901 Secy.—Louis R. McFarland, 211 Hobson, Hot Springs 71901
GRANT	Pres.—Curtis B. Clark, 200 South Rose, Sheridan 72150 Secy.—Clyde D. Paulk, 200 South Rose, Sheridan 72150
GREENE-CLAY	Pres.—Solon McGaughey, 901 W. Kingshighway, Paragould 72450 Secy.—Charles S. Northum, 425 W. Jackson, Piggott 72454
HEMPSTEAD	Pres.—Lowell Harris, 205 South Elm, Hope 71801 Secy.—Jack Royal, P.O. Box 97, Hope 71801
HOT SPRING	Pres.—C. F. Peters, 1420 Potts, Malvern 72104 Secy.—John A. Vaughan, 115 East Highland, Malvern 72104
HOWARD-PIKE	Pres.—M. H. Wilmoth, Second and Sypert, Nashville 71852 Secy.—
INDEPENDENCE	Pres.—Charles A. Taylor, North Arkansas Clinic, Batesville 72501 Secy.—James M. Stalker, 477 East Main, Batesville 72501
JACKSON	Pres.— Secy.—John D. Ashley, Second and Laurel, Newport 72112
JEFFERSON	Pres.—C. C. Tracy, 1421 Cherry, Pine Bluff 71601 Secy.—Carl W. Nash, 1310½ Cherry, Pine Bluff 71601
JOHNSON	Pres.—Guy Shrigley, 416 Sevier, Clarksville 72830 Secy.—Robert H. Manley, 307 East Main, Clarksville 72830
LAFAYETTE	Pres.—Willie J. Lee, P.O. Box 276, Stamps 71860 Secy.—Charles Cross, 317 Main, Stamps 71860
LAWRENCE	Pres.—J. J. Whittington, III, Hwy. 25 West, Walnut Ridge 72476 Secy.—J. B. Elders, 321 S. W. Third, Walnut Ridge 72476
LEE	Pres.—Dwight W. Gray, 110 West Chestnut, Marianna 72360 Secy.—F. S. Dozier, 29 North Poplar, Marianna 72360
LINCOLN	Pres.—James W. Freeland, P.O. Box 608, Star City 71667 Secy.—Richard C. Petty, P.O. Box 638, Star City 71667

PROCEEDINGS

LITTLE RIVER	Pres.—James D. Armstrong, Ashdown Clinic, Ashdown 71822 Secy.—Joe G. Shelton, P.O. Box 697, Ashdown 71822
LOGAN	Pres.—George W. Smiley, State Sanatorium 72954 Secy.—James T. Smith, 710 North Express, Paris 72855
LONOKE	Pres.—Fred C. Inman, Jr., Court Street, Carlisle 72024 Secy.—B. E. Holmes, 305 West Front, Lonoke, 72086
MILLER	Pres.—John S. Griffin, 4800 Loop Drive, Texarkana 75501 Secy.—J. K. Laws, St. Michaels Hospital, Texarkana 75501 Executive Secy.—Mrs. Marilyn Pryor, P.O. Box 1843, Texarkana 75501
MISSISSIPPI	Pres.—Herbert Jones, 529 North 10th, Blytheville 72315 Secy.—Eldon Fairley, P.O. Box 71, Osceola 72370
MONROE	Pres.—W. L. Walker, 114 South New Orleans, Brinkley 72021 Secy.—J. P. Williams, Jr., 127 S. New Orleans, Brinkley 72021
NEVADA	Pres.—H. Blake Crow, 327 East Second, Prescott 71857 Secy.—Charles A. Hesterly, 419 East Sixth, Prescott 71857
OUACHITA	Pres.—Judson Hout, 530 Jefferson SW, Camden 71701 Secy.—L. V. Ozment, 530 Jefferson SW, Camden 71701
PHILLIPS	Pres.—William W. Biggs, Helena Hospital, Helena 72342 Secy.—Robert D. Miller, Jr., 616 Elm, Helena 72342
POLK	Pres.—David P. Hefner, 600 West Seventh, Mena 71953 Secy.—Henry N. Rogers, 600 West Seventh, Mena 71953
POPE-YELL	Pres.—Stanley Teeter, 511 West Main, Russellville 72801 Secy.—W. E. King, 511 West Main, Russellville 72801
PULASKI	Pres.—Gilbert O. Dean, Donaghey Building, Little Rock 72201 Secy.—G. Thomas Jansen, 500 S. University, Little Rock 72205 Executive Secy.—Mr. Paul Harirs, 510 Pulaski, Little Rock 72201
RANDOLPH	Pres.—Hal S. Barre, 309 West Broadway, Pocahontas 72455 Secy.—W. W. Scott, 309 West Broadway, Pocahontas 72455
SALINE	Pres.—Robert E. Jones, 223 South Market, Benton 72015 Secy.—James C. Bethel, 221 East Sevier, Benton 72015
SCOTT	Pres.—H. B. Wright, P.O. Box 249, Waldron 72958 Secy.—J. A. Jenkins, Waldron 72958
SEARCY	Pres.—John H. Williams, P.O. Box 177, Marshall 72650 Secy.—John A. Hall, 302 East Main, Clinton 72031
SEBASTIAN	Pres.—C. F. Boulden, 100 South 14th, Fort Smith 72901 Secy.—Stanley R. McEwen, 1214 North "B", Fort Smith 72901 Assistant to the Secy.—Mrs. Jackie Boyd, c/o Sparks Hospital, Fort Smith 72901
SEVIER	Pres.—Charles N. Jones, 421 West Gilson, DeQueen 71832 Secy.—John E. Griffin, 421 West Gilson, DeQueen 71832
ST. FRANCIS	Pres.—C. E. Crawley, 328 Kittel Road, Forrest City 72335 Secy.—J. Neal Laney, 328 Kittel Road, Forrest City 72335
UNION	Pres.—Jacob P. Ellis, 430 S.W. Avenue, El Dorado 71730 Secy.—Ronald M. Lewis, 460 West Oak, El Dorado 71730
WASHINGTON	Pres.—James K. Patrick, 241 W. Spring, Fayetteville 72701 Secy.—Nancy A. Rabon, P.O. Box 656, Fayetteville 72701
WHITE	Pres.—M. C. Hawkins, Jr., 403 East Lincoln, Searcy 72143 Secy.—Hugh R. Edwards, 607 Woodruff, Searcy 72143
WOODRUFF	Pres.—Fay B. Millwee, P.O. Box 248, McCrory 72101 Secy.—B. E. Hendrixson, 306 East Third, McCrory 72101

PROCEEDINGS

# COMMITTEES 1967 - 1968

## Arkansas Medical Society

Term  
Expires:

### COMMITTEE ON CANCER CONTROL

Robert L. McDonald, 1108½ Poplar, Pine Bluff 71601	1968
J. B. Holder, 814 North Main, Monticello 71655	1968
Edward M. Cooper, 224 East Matthews, Jonesboro 72401	1969
Glenn P. Schoettle, 308 South Rhodes, West Memphis 72301	1969
Frank Kumpuris, 415 North University, Little Rock 72205 <i>CHAIRMAN</i>	1970
Charles R. Henry, 500 South University, Little Rock 72205	1970

### COMMITTEE ON MEDICAL LEGISLATION

Ross E. Maynard, National Building, Pine Bluff 71601	1968
Neil E. Compton, Box 209, Bentonville 72712	1968
O. E. Bradsher, 901 West Kingshighway, Paragould 72150	1968
Elvin Shuffield, 1000 Wolfe, Little Rock 72202 <i>CHAIRMAN</i>	1969
A. C. Bradford, 100 South 14th, Fort Smith 72901	1969
William A. Snodgrass, Donaghey Building, Little Rock 72201	1969
Alan G. Cazort, 4001 West Capitol, Little Rock 72205	1970
W. Payton Kolb, 1120 Marshall, Little Rock 72202	1970
Martin Eisele, 101 Whittington, Hot Springs 71901	1970

### SUB-COMMITTEE ON NATIONAL LEGISLATION

George F. Wynne, 202 West Cypress, Warren 71671	1968
Dale Alford, 115 West Capitol, Little Rock 72201	1968
Kenneth R. Duzan, 413 West Oak, El Dorado 71730	1969
John C. Faris, 907 Union, Jonesboro 72401	1969
Omer Bradsher, 901 West Kingshighway, Paragould 72450 <i>CHAIRMAN</i>	1970
H. A. Crane, Jr., 1107 Cherry, Pine Bluff 71601	1970

### COMMITTEE ON PUBLIC HEALTH (Rural Health)

C. C. Long, 110 West Commercial, Ozark 72949	1968
Benjamin C. Hyatt, Community Health Center, Perryville 72126	1968
C. A. Archer, Jr., 919 Locust, Conway 72032	1968
Vestal B. Smith, 21 Elm Street, Marked Tree 72365	1969
Omer E. Bradsher, 901 West Kingshighway, Paragould 72450	1969
Ben N. Saltzman, 126 West 6th, Mountain Home 72653 <i>CHAIRMAN</i>	1970
Edgar J. Easley, State Health Department, Little Rock 72201	1970

### SUB-COMMITTEE ON LIAISON WITH THE STATE BOARD OF HEALTH

H. H. Atkinson, 300 Cadiz, Fordyce 71742	1968
Perry J. Dalton, 115 Hospital Drive, SW, Camden 71701	1968
Charles G. Swingle, 105 Nathan, Marked Tree 72365	1968
Hugh R. Edwards, 607 Woodruff, Searcy 72143	1969
Purcell Smith, Jr., 4001 West Capitol, Little Rock 72205 <i>CHAIRMAN</i>	1970

### SUB-COMMITTEE ON MATERNAL AND CHILD WELFARE

James T. Rhyne, 1310 Cherry, Pine Bluff 71601	1968
W. P. Phillips, 408 South 16th, Fort Smith 72901	1968
Mose Smith, III, 5600 West Markham, Little Rock 72205	1969
Roger Bost, 4301 West Markham, Little Rock 72205 <i>CHAIRMAN</i>	1970

### SUB-COMMITTEE ON TUBERCULOSIS

W. Paul Reagan, 7th and High, Little Rock 72202	1968
Charles C. Tracy, 1421 Cherry, Pine Bluff 71601	1968
Joseph G. Shelton, Jr., Box 697, Ashdown 71822	1968
Harley C. Darnall, 500 Lexington, Fort Smith 72901	1969
Kenneth A. Siler, 707 North Vine, Harrison 72601	1969
John C. Schultz, 900 North University, Little Rock 72207 <i>CHAIRMAN</i>	1970
Joe B. Scruggs, Arkansas Baptist Medical Center, Little Rock 72201	1970

### SUB-COMMITTEE ON AGING

Van C. Binns, 201 East Trotter, Monticello 71655	1968
John F. Guenthner, 126 West 6th, Mountain Home 72653	1968
Don G. Howard, 110 North Clifton, Fordyce 71655	1969
Harold H. Hedges, 814 North University, Little Rock 72205 <i>CHAIRMAN</i>	1970
Thomas H. Wortham, 813 Marshall Road, Jacksonville 72076	1970

### SUB-COMMITTEE ON PHYSICAL FITNESS AND SCHOOL HEALTH

Gerald K. Patton, 100 North 16th, Fort Smith 72901	1968
Edwin L. Dunaway, 919 Locust, Conway 72032	1968
Jack W. Kennedy, 1008 Pine, Arkadelphia 71923	1969
Francis M. Henderson, 125 South Main, Stuttgart 72160 <i>CHAIRMAN</i>	1970

### SUB-COMMITTEE ON INDUSTRIAL HEALTH

V. Bryan Perry, 1722 West 12nd, Pine Bluff 71601	1968
Claude F. Peters, 1420 Potts, Malvern 72104	1968
John D. Olson, 1500 Dodson, Fort Smith 72901	1969
William L. Steele, 5520 West Markham, Little Rock 72205	1969
Phillip T. Cullen, 500 South University, Little Rock 72205 <i>CHAIRMAN</i>	1970

### SUB-COMMITTEE ON MENTAL HEALTH

William C. Whaley, 203 East Church, Warren 71671	1968
Samuel D. Watson, 421 West Kingshighway, Paragould 72450	1968
William G. Reese, 4301 West Markham, Little Rock 72205	1969
W. Payton Kolb, 1120 Marshall, Little Rock 72202	1969
Robert H. Whitehead, Jr., Donaghey Building, Little Rock 72201	1969
W. O. Young, Donaghey Building, Little Rock 72201 <i>CHAIRMAN</i>	1970
George G. Regnier, 500 South University, Little Rock 72205	1970
Edwin V. Dildy, Jr., 122 West Hempstead, Nashville 71852	1970

### IMMUNIZATIONS SUB-COMMITTEE

Wilbur G. Lawson, 207 East Dickson, Fayetteville, 72701 <i>CHAIRMAN</i>	1968
Howard R. Harris, 207 South Elm, Dumas 71639	1968
John C. Watts, 1400 South "D" Fort Smith 72901	1969

## PROCEEDINGS

	Term Expires:	Term Expires:
Thomas E. Townsend, 1310 Cherry, Pine Bluff 71601	1969	Art B. Martin, 1500 Dodson, Fort Smith 72901 <i>CHAIRMAN</i>
Vida Gordon, 4301 West Markham, Little Rock 72205	1970	Martin F. Heidgen, 1808 West Main, Russellville 72801
Fred Lee, 5512 West Markham, Little Rock 72205	1970	<b>COMMITTEE ON PUBLIC RELATIONS</b>
<b>SUB-COMMITTEE ON TRAFFIC SAFETY</b>		Gordon P. Oates, 1710 West 10th, Little Rock 72202
Lonnie R. Turney, Second and Pine, McGehee 71651	1968	Paul A. Wallick, 216 South Main, Monticello 71655
Louise Henry, 602 Garrison, Fort Smith 72901 <i>CHAIRMAN</i>	1969	A. C. Bradford, 100 South 14th, Fort Smith 72901 <i>CHAIRMAN</i>
James G. Stuckey, 500 South University, Little Rock 72205	1969	Omer E. Bradsher, 901 West Kingshighway, Paragould 72450
Albert R. Hammon, 520 North Spring, Harrison 72601	1969	G. Thomas Jansen, 500 South University, Little Rock 72205
J. Warren Murry, 1749 North College, Fayetteville 72701	1969	Neil E. Compton, P.O. Box 209, Bentonville 72712
Richard B. Clark, 4301 West Markham, Little Rock 72205	1970	<b>SUB-COMMITTEE ON LIAISON WITH AUXILIARY</b>
Ray Jouett, Donaghey Building, Little Rock 72201	1970	Ross Fowler, 213 West Stephenson, Harrison 72601 <i>CHAIRMAN</i>
Robert B. Benfield, 912 Locust, Conway 72032	1970	J. P. Price, Jr., 216 South Main, Monticello 71655
<b>SUB-COMMITTEE ON LIAISON WITH VOCATIONAL REHABILITATION</b>		A. S. Koenig, 922 Lexington, Fort Smith 72901
Major E. Smith, 124 East Peddicord, Dermott 71638	1968	C. Randolph Ellis, 1004 South Main, Malvern 72104
Paul G. Henley, 700 West Faulkner, El Dorado 71730	1968	C. C. Long, 110 West Commercial, Ozark 72949
W. J. Stocker, Block and Dickson, Fayetteville 72701	1968	<b>SUB-COMMITTEE ON STATE HEALTH AND MEDICAL RESOURCES FOR CIVIL DEFENSE</b>
U. Lee Smith, Mineral Springs Highway, Nashville 71852	1969	Monroe D. McClain, 1120 Marshall, Little Rock 72202
Robert H. Atkinson, 236 Central, Hot Springs 71901	1969	Edgar J. Easley, State Health Department, Little Rock 72201 <i>CHAIRMAN</i>
Gaston A. Hebert, 802 Prospect Avenue, Hot Springs 71901	1969	L. U. Rushing, P.O. Box 1912, Texarkana 75501
Benjamin W. Drompp, 4301 West Markham, Little Rock 72205 <i>CHAIRMAN</i>	1970	Russell W. Cobb, 1420 Potts, Malvern 72104
H. King Wade, Jr., 231 Central, Hot Springs 71901	1970	Bedford W. Smith, 300 South Rhodes, West Memphis 72301
Charles N. McKenzie, 412 Cross, Little Rock 72201	1970	Quin M. Baber, 212 West Sevier, Benton 72015
<b>COMMITTEE ON MEDICAL EDUCATION</b>		<b>ADVISORY SUB-COMMITTEE TO THE MEDICAL ASSISTANTS SOCIETY</b>
Winston K. Shorey, 4301 West Markham, Little Rock 72205	1968	Karlton H. Kemp, 408 Hazel, Texarkana 75501
Oliver C. Raney, 1720 West 42nd, Pine Bluff 71601	1968	John W. Dorman, Springdale Clinic, Springdale 72764
James W. Hawley, P.O. Box 38, Camden 71701	1969	Doris A. Baldridge, 103 North 6th, Heber Springs 72543
W. H. Calaway, North Arkansas Clinic, Batesville 72501	1969	Guy P. Shrigley, 416 Sevier, Clarksville 72830
Calvin J. Dillaha, 500 South University, Little Rock 72205 <i>CHAIRMAN</i>	1970	A. R. Clowney, 312 Thompson, El Dorado 71730
Lee B. Parker, 101 North Second, McGehee 71654	1970	Jerry C. Holton, 509 South Main, Stuttgart 72160
<b>SUB-COMMITTEE ON POSTGRADUATE EDUCATION</b>		E. Frank Reed, Jr., 916 Cherry, Pine Bluff 71601 <i>CHAIRMAN</i>
James S. Taylor, 4301 West Markham, Little Rock 72205	1968	<b>COMMITTEE ON ARRANGEMENTS FOR ANNUAL SESSION</b>
James K. Patrick, 241 West Spring, Fayetteville 72701	1968	John V. Busby, 4301 West Markham, Little Rock 72205
Albert R. Hammon, 520 North Spring, Harrison 72601	1968	Art B. Martin, 1500 Dodson, Fort Smith 72901
John T. Riggan, 4301 West Markham, Little Rock 72205	1968	Joseph S. Robinette, 1115 Cherry, Pine Bluff 71601
George F. Wynne, 202 West Cypress, Warren 71671	1969	Betty Ann Lowe, 401 East 5th, Texarkana 75501
George K. Mitchell, 900 North University, Little Rock 72205 <i>CHAIRMAN</i>	1970	A. S. Koenig, 922 Lexington, Fort Smith 72901
<b>COMMITTEE ON HOSPITALS</b>		Wright Hawkins, 100 South 14th, Fort Smith 72901
George B. Talbot, 1421 Cherry, Pine Bluff 71601	1968	E. Z. Hornberger, 404 South 16th, Fort Smith 72901
John P. Wood, 907 Mena, Mena 71953	1968	J. Harry Hayes, Jr., 500 South University, Little Rock 72205 <i>CHAIRMAN</i>
Wright Hawkins, 100 South 14th, Fort Smith 72901	1969	Amial Chudy, 1801 Maple, North Little Rock, 72114
M. H. Harris, 1205 McLain, Newport 72112	1969	John W. Lane, Arkansas Baptist Medical Center, Little Rock 72201
		<b>COMMITTEE ON VETERANS ADMINISTRATION AFFAIRS</b>
		N. W. Riegler, Jr., 1024 Scott, Little Rock 72202
		1968

## PROCEEDINGS

	Term Expires:	
John H. Delamore, 1100 West 3rd, Fordyce 71742	1968	
Friedman Sisco, 101 South Shilo, Springdale 72764	1968	
Preston Hathcock, Block and Dickson, Fayetteville 72701	1968	
Chalmers S. Pool, V.A. Hospital, North Little Rock 72114	1969	
James R. Walt, 500 South University, Little Rock 72205 <i>CHAIRMAN</i>	1970	
<b>COMMITTEE ON INSURANCE</b>		
John D. Clower, 1149 West Walnut, Rogers 72756	1968	
Wayne G. Pullen, 421 West Gilson, DeQueen 71832	1968	
Guy R. Farris, 6213 Lee Avenue, Little Rock 72205	1969	
Russell W. Cobb, 1420 Potts, Malvern 72104	1969	
Thomas D. Honeycutt, 509 Cross, Little Rock 72201 <i>CHAIRMAN</i>	1970	
David H. Newbern, St. Vincent Infirmary, Little Rock 72201	1970	
<b>SUB-COMMITTEE ON LIAISON WITH BLUE CROSS-BLUE SHIELD</b>		
J. B. Jameson, Jr., 110 Harrison, SW, Camden 71701	1968	
Charles W. Reid, 1113 Cherry, Pine Bluff 71601	1968	
A. S. Koenig, 922 Lexington, Fort Smith 72901	1969	
Orval E. Riggs, 806 Jeter Drive, Jonesboro 72401	1969	
James R. Morrison, St. Vincent Infirmary, Little Rock 72201 <i>CHAIRMAN</i>	1970	
William S. Orr, 500 South University, Little Rock 72205	1970	
<b>COMMITTEE ON LIAISON WITH THE NURSING PROFESSION</b>		
A. D. Tisdale, Jr., 1515 West 42nd, Pine Bluff 71601	1968	
Glenn G. Hairston, 317 East 3rd, Prescott 71857	1968	
Robert H. Whitehead, Jr., Donaghey Building, Little Rock 72201	1969	
L. L. Hubener, 201 East Main, Blytheville 72315	1969	
Frank Padberg, 500 South University, Little Rock 72205 <i>CHAIRMAN</i>	1970	
James W. Headstream, 500 South University, Little Rock 72205	1970	
<b>COMMITTEE ON MEDICINE AND RELIGION</b>		
Kenneth A. Siler, 707 North Vine, Harrison 72601	1968	
Fred Gordy, 552 Locust, Conway 72032	1968	
William E. Knight, 1500 Dodson, Fort Smith 72901	1969	
Jerome S. Levy, 500 South University, Little Rock 72205 <i>CHAIRMAN</i>	1970	
Bruce E. Schratz, 1801 Maple, North Little Rock 72114	1970	
John H. Miller, 415 Hospital Drive, SW, Camden 71701	1969	
<b>COMMITTEE ON CONSTITUTIONAL REVISION</b>	Council Committee	
C. Randolph Ellis, 1004 South Main, Malvern 72104 <i>CHAIRMAN</i>		
Lee B. Parker, 101 North Second, McGehee 71654		
Harry Hayes, Jr., 500 South University, Little Rock 72205		
Paul Rogers, P.O. Box 3488, Station A, Fort Smith 72901		
H. King Wade, Jr., 231 Central, Hot Springs 71901		
<b>BUDGET COMMITTEE</b>	Council Committee	
W. R. Brooksher, P.O. Box 3488, Station A, Fort Smith 72901 <i>CHAIRMAN</i>		
H. W. Thomas, 105 North Freeman, Dermott, 71638		
Ben N. Saltzman, 126 West 6th, Mountain Home 72653		
<b>SENIOR MEDICAL DAY COMMITTEE</b>	Council Committee	
Bill Dave Stewart, 415 North University, Little Rock		
<b>72205 <i>CHAIRMAN</i></b>		
Calvin R. Siemons, 1714 West 12nd, Pine Bluff 71601		
<b>SPECIAL FEE COMMITTEE</b>	Council Committee	
C. C. Long, 110 West Commercial, Ozark 72949 <i>CHAIRMAN</i>		
W. J. Wilkins, 1421 Cherry, Pine Bluff 71601		
Jerome Levy, 500 South University, Little Rock 72205		
Charles Reid, 1113 Cherry, Pine Bluff 71601		
<b>LIAISON COMMITTEE WITH STATE WELFARE DEPARTMENT</b>	Council Committee	
Joseph A. Norton, 8570 Cantrell Road, Little Rock 72207		
Elvin Shuffield, 1000 Wolfe, Little Rock 72202		
H. W. Thomas, 105 North Freeman, Dermott 71638		
T. E. Townsend, 1310 Cherry, Pine Bluff 71601		
<b>LONG RANGE PLANNING COMMITTEE</b>	Council Committee	
Thomas H. Wortham, 813 Marshall Road, Jacksonville 72076 <i>CHAIRMAN</i>		
Glen F. Baker, 814 Cobb, Jonesboro 72401		
Robert B. Benafield, 919 Locust, Conway 72032		
Carl Northcutt, Route 1, Box 21-D, Stuttgart 72160		
Lee B. Parker, 101 North Second, McGehee 71657		
Berry L. Moore, Jr., 108½ North Washington, El Dorado 71730		
Robert M. Bransford, 401 East 5th, Texarkana 75501		
Martin Eisele, 101 Whittington, Hot Springs 71901		
George K. Mitchell, 900 North University, Little Rock 72205		
Arthur Moore, 675 Lollar Lane, Fayetteville 72701		
Neil E. Crow, 1500 Dodson, Fort Smith 72901		
<b>BLUE CROSS-BLUE SHIELD ADJUDICATION COMMITTEE</b>	Council Committee	
Bill Dave Stewart, 415 North University, Little Rock 72205		
John V. Busby, 4301 West Markham, Little Rock 72205		
John E. Greutter, Donaghey Building, Little Rock 72201		
<b>MEDICAL SOCIETY REPRESENTATIVES ON HOSPITAL-INSURANCE— PHYSICIAN COMMITTEE</b>	Council Committee	
Jim E. Lytle, North Arkansas Clinic, Batesville 72501		
T. S. Van Duyn, 1204 South Buerkle, Stuttgart 72160		
Albert W. Lazenby, 135 West Waterman, Dumas 71639		
John H. Delamore, 1100 West Third, Fordyce 71742		
James W. Branch, 426 South Main, Hope 71801		
Thomas E. Burrow, 236 Central, Hot Springs 71901		
Guy R. Farris, 6213 Lee Avenue, Little Rock 72205 <i>CHAIRMAN</i>		
Thomas D. Honeycutt, 509 Cross, Little Rock 72201		
John W. Vinzant, 22 East Spring, Fayetteville 72701		
<b>PHYSICIAN TO WORK WITH AMA COMMITTEE ON QUACKERY</b>	Council Committee	
Frank M. Burton, 101 Whittington, Hot Springs 71901		
<b>ARKANSAS STATE ADVISORY COMMITTEE TO THE SELECTIVE SERVICE SYSTEM</b>	Council Committee	
Joseph Ledbetter, 801 South Church, Jonesboro 72401		
Edwin L. Dunnaway, 919 Locust, Conway 72032		
T. S. Van Duyn, P.O. Box 110, Stuttgart 72160		
W. A. Regnier, 115 Pine, Crossett 71635		
Allen R. Russell, 1024 Poplar, Pine Bluff 71601		
James F. Clark, 524 West Faulkner, El Dorado 71730		
Gerald H. Teasley, 401 East 5th, Texarkana 75501 <i>CHAIRMAN</i>		
Frank Burton, 101 Whittington, Hot Springs 71901		
John T. Herron, State Health Department, Little Rock 72201		
Robert A. Calcote, Donaghey Building, Little Rock 72201		
Ulys Jackson, 118 South Pine, Harrison 72601		
Friedman Sisco, 101 South Shilo, Springdale 72764		
L. A. Whittaker, 621 South 21st, Fort Smith 72901		



**MRS. ART MARTIN**

Fort Smith

President 1967-1968

**Woman's Auxiliary to the  
Arkansas Medical Society**

**Woman's Auxiliary to The Arkansas Medical Society Annual Convention, 1967**

The Woman's Auxiliary to the Arkansas Medical Society Annual convention opened April 30, 1967 for three days with headquarters at the Arlington Hotel in Hot Springs.

The President, Mrs. John McCollough Smith and President-Elect, Mrs. Art Martin entertained members of the Executive Board with a tea Sunday afternoon following a pre-convention board meeting.

Honor guest throughout the convention was Mrs. Asher Yaguda of Newark, New Jersey, President of The Woman's Auxiliary to the American Medical Association. Mrs. Yaguda spoke at a luncheon at the Velda Rose Towers on Monday. Arrangements for the luncheon were by Craighead-Poinsett County Auxiliary, Mrs. H. W. Keisker, President.

Mrs. Winthrop Rockefeller was featured speaker at the Tuesday luncheon with an address entitled "My First 100 Days as a Governor's Wife". Hostesses were members of Sebastian County Auxiliary, Mrs. Carl Wilson, President.

Awards were presented at the luncheons for outstanding work in supporting AMAERF and for Doctors' Day observances.

The Auxiliary voted to send \$50.00 to the Vietnamese Student Aide Fund.

It was announced with pride that Mrs. C. C. Long of Ozark, Arkansas had been nominated President-Elect of the Woman's Auxiliary to the American Medical Association.

Mrs. Lyman Armstrong, President of the local chapter Woman's Auxiliary to the Student Amer-

ican Medical Association gave a report of their many activities and projects for the year.

The Auxiliary joined the Society in a memorial service for deceased members of both organizations. From the Auxiliary were Mrs. L. Gardner of Russellville, Mrs. Allan G. Talbot, Lake Village, Mrs. Harry White, Rogers, Mrs. A. D. Cathey, El Dorado and Mrs. Harry E. Murry, Texarkana.

The Heart Association sponsored a course in Emergency Resuscitation for members of the Auxiliary at the close of the convention. About twenty-five members participated.

Newly elected officers for 1967-68 were:

President, Mrs. Art Martin, Fort Smith

President-Elect, Mrs. C. D. Burroughs, Pine Bluff

First Vice President, Mrs. W. R. Meredith, Pine Bluff

Second Vice President, Mrs. J. F. Jackson, New-  
port

Third Vice President, Mrs. Carl Parkerson, Hot  
Springs

Fourth Vice President, Mrs. W. E. King, Jr.

Recording Secretary, Mrs. Neil Crow, Fort Smith

Treasurer, Mrs. W. Myers Smith, North Little Rock

A total of 135 registered for the Convention.

Garland County Auxiliary was hostess for the Convention. Mrs. Joseph Rosenzweig, President and Mrs. Thomas Burrow Convention Chairman.

Recording Secretary,

Mrs. W. R. Meredith





STUDIES FROM  
THE UNIVERSITY OF ARKANSAS MEDICAL CENTER  
THE DEPARTMENT OF

## OBSTETRICS AND GYNECOLOGY

WILLIS E. BROWN, M.D., Professor and Chairman

STACY R. STEPHENS, M.D., EDITOR

### Carcinoma of the Vagina Following Treatment of Carcinoma of Cervix with Radiation Therapy

Manis C. Edwards, M.D.\*

Roentgen discovered the rays which now bear his name in 1895. Carcinogenic effects of the rays upon the skin were appreciated a short time later.

The first roentgen ray treatment of carcinoma of the cervix took place in 1901. In 1913 with development of the Coolidge tube, accurate roentgen therapy became generally available.

In 1898 the Curies discovered radium. Its physiologic effects were soon learned when Becquerel burned the skin of his abdomen carrying radium in his vest pocket. Its therapeutic effects on malignancy likewise rapidly became apparent, and radium was first applied to carcinoma of the cervix by Cleaver in 1903.<sup>2</sup> This knowledge of the carcinocidal effect of radiation and its use as a standard form of therapy in malignancy have hence been with us for more than half a century.

The paradoxical therapeutic and carcinogenic effects of radiation were given little attention until the past two decades. The development of active tumor clinics with good records and prolonged follow-up brought to light the occurrence of what appeared to be new primary lesions in patients previously treated with radiation.

In our own gynecologic tumor clinic we are beginning to see occasional instances of carcinoma of the vagina in patients previously treated with radiation for carcinoma of the cervix.

#### HISTORICAL BACKGROUND

Hynes<sup>3</sup> in his discussion of late local recurrence

or late radiation cancer reviewed 464 patients in which he noted three instances of cancer of the vagina occurring more than 10 years after treatment for Carcinoma of the Cervix. Two lesions were in-situ and one was invasive carcinoma. He defined late recurrence as carcinoma appearing in the vagina 5 or more years after treatment. He suggested that regeneration of inactive cells from the original lesion was unlikely after 5 years; because most recurrences appeared within 2 or 3 years after treatment. That these were new lesions arising in epithelium suffering late effects of radiation damage seemed more likely to him.

Kess, Melamed, and Daniel<sup>4</sup> studied in-situ epidermoid carcinoma of the cervix and vagina following radiotherapy for cervical cancer. They found seven such cases of which five ranged from six to seventeen years post therapy. They felt that these lesions were related to radiation since recurrence or residual from the original lesion should have occurred earlier and at the site of the original lesion.

Latour and Fraser<sup>5</sup> noted 44 recurrences in 1,112 cases (3.9 percent). These ranged from 5 to 30 years post therapy. Twenty-two patients originally had Stage I; seventeen Stage II, and five Stage III carcinoma of the cervix.

Recurrences included eight in the cervix, fourteen in the vagina, eighteen in the parametria, thirteen at the pelvic wall, seven in the bladder, two rectal, and thirteen distant. Treatment ranged from additional x-ray to exenteration.

\*From the Department of Obstetrics and Gynecology, University of Arkansas Medical Center, Little Rock, Arkansas.

Many of these patients died within two years of the diagnosis of recurrence and only 3 survived more than 5 years after discovery of their recurrence.

Arneson and Williams<sup>1</sup> in their long-term follow-up of cervical cancer give tables and figures which bear out their statement that "the five year values give a realistic interpretation of cure rates. Few patients die of cervical cancer if they are free from recurrence at that period of observation".

### MATERIAL

Patients with epidermoid carcinoma of the cervix, Stages I and II treated with standard internal and external radiation dosages during the 10-year period 1949-58 were reviewed with regard to vaginal tumors 5 or more years post therapy.

During the 10-year period 1949-59 four hundred eighty patients with carcinoma of the cervix Stages O-II were treated and adequately followed at the University of Arkansas Medical Center.

Radiation therapy consisted of conventional internal and external sources delivering the following dosages:

Cervix	10,000-12,000 R
Todd's A	7,500- 9,500 R
Lateral pelvic wall	5,000 R
Bladder and Rectum less than	5,000 R

Surgical therapy consisted mostly of Wertheim hysterectomy or occasionally Schauta procedure with lymphadenectomy.

Table I shows therapy by stage of disease.

TABLE I

Stage	Radiation No.	Surgery No.	Total No.
0	0	51	51
I	158	26	184
II	245	0	245
	—	—	—
	403	77	480

### THERAPY BY STAGE OF DISEASE

### RESULTS

Four of the 480 patients developed vaginal carcinoma five or more years post therapy.

In the surgical group there was one recurrence. Mrs. F. C., a 56-year-old colored female had diagnosed a carcinoma in-situ of the cervix in 1951. She was treated by total abdominal hysterectomy and bilateral salpingo-oophorectomy. She also was noted to have myomas and residuals of pelvic inflammatory disease. The surgical specimen re-

vealed carcinoma-in-situ with glandular involvement but nothing more. Her course was uneventful for 7 years until 1958 when she developed a Class III Pap Smear and a vaginal biopsy showed foci of mild atypia. There was no change until 1960 when an area on the left angle of the vaginal cuff appeared granular and bled on contact. A biopsy revealed invasive squamous cell carcinoma. The patient refused any further therapy. By 1963 she had a single crater at the vaginal cuff with thickening bilaterally to the lateral pelvic walls. The bladder base was involved and the rectum attached. In February, 1964 she developed a vesicovaginal fistula. This patient died from tumor in November, 1964.

The one vaginal carcinoma in 77 surgically treated patients represents an incidence of 1.3 percent.

In the radiologically treated group 3 lesions occurred. Mrs. E. S., a 44-year-old white female, had diagnosed a Stage I carcinoma of the cervix in 1951 and received internal and external irradiation; Cervix 22,000 r, Point A 5,900 r, LPW 1,700 r, Bladder 4,200 r and Rectum 4,000 r. She had an uneventful course for 11 years until April, 1962 when she developed a Class III Pap and an area of leukoplakia on the vaginal wall. Vaginal biopsy was reported as radiation effect. By October 1962 a Class IV smear was reported but no gross lesion was evident. In February, 1963, a Class III smear was still present, and biopsy showed fragments of anaplastic cells. In April, 1963 a repeat biopsy revealed squamous cell carcinoma. She had a total vaginectomy after zonal biopsies revealed malignant changes to be too diffuse to make radium needles feasible. She was alive and well in April, 1966.

Mrs. M. G., a 54-year-old colored female had diagnosed a Stage I carcinoma of the cervix in 1953. The tumor was noted to be extremely anaplastic. (In retrospect, the patient had a cervical biopsy in 1944 read as cervicitis with squamous metaplasia which would now be read as carcinoma-in-situ). She was treated with internal and external irradiation in 1953 receiving 13,200 r to the cervix, 7,500 r (estimated not listed) to Point A; 5,300 r to the lateral pelvic walls; 4,500 r to the bladder, and 4,000 r to the rectum. In 1954 there was a small amount of post coital bleeding, but a biopsy was reported negative. Her course then was uneventful until 1962 when a small whit-

ish plaque developed in the vagina. Biopsy was reported as mild leukoplakia. Pap smear was negative. In April, 1963, the Pap Smear was Class IV and biopsy of clinically leukoplakic area revealed invasive squamous cell carcinoma of the vagina. Tumor Board recommendation was that she be admitted for zonal determination of the extent of the lesion and possible surgery but the patient refused further therapy. She was lost to follow-up thereafter.

Mrs. S. T., a 56-year-old white female, had diagnosed a Stage I squamous cell carcinoma of the cervix in 1953 (with a history of excessive bleeding in 1944—she had a D & C followed by x-ray sterilization in 1945 at another institution). She received internal and external irradiation receiving the following dosages: Cervix 15,400 r, Point A 9,700 r, LPW 5,300 r, Bladder 4,300 r, and Rectum 4,700 r. She did well with post treatment biopsy negative. In 1959 a Class III Pap occurred and biopsy revealed severe chronic cervicitis, cleared by conservative therapy and Pap smears reverted to negative through 1960. She did not keep her appointments during 1961-62, but returned for follow-up in 1963 after several letters from the Tumor Clinic urging her to do so. On return she gave a history of a foul vaginal discharge for one year. Pap smear at this time was reported as Class III. There was a gross lesion, 1 x 2 cms. in the middle one-third of the anterior vaginal wall with a greenish, necrotic appearance. Submucosal extension was palpated around the lateral wall and biopsy was reported as carcinoma of the vagina. She was treated in October, 1963 by a plastic mould with radium needles inserted down its center in tandem pairs. Two 50-hour implantations 7 days apart were carried out delivering 10,000 r to cylinder surfaces and vaginal mucosa. Follow-up on January 15, 1964 showed the vagina to be scarred but with no recurrence or residual. There was mild vulvar irritation. Biopsy showed radiation effect only. This patient was alive and well in November, 1966.

The three vaginal lesions occurring in 403 patients treated with internal and external radiation present an incidence of 0.7 percent.

### DISCUSSION

While our surgical series and the number of late lesions are relatively small, it is tempting to speculate that if the surgical group were large enough to be an adequate sample, the recurrences would be essentially equal in the two groups.

However, as Table I shows, our surgical and radiological treatment groups are not comparable because of the absence of Stage II patients in the former and Stage 0 patients in the latter.

Our incidence of late vaginal lesions in radiologically treated patients (0.7 percent) is comparable with that of Hynes (0.65 percent).

Several other articles are found in the literature, some of which have previously been alluded to (3, 6, 7). Most are in the form of case reports or small number of patients without any statistical background as to number of patients treated or incidence. Hence, they merely present an impression without statistical foundation which gives us no means of comparing their material with ours. On the basis of our material, it would appear that these late recurrences are probably new lesions but not necessarily radiation induced.

Our study fails to explain the absence of late vaginal lesions in 245 Stage II patients.

### SUMMARY

Carcinogenic effect of radiation as a possible etiologic factor in late vaginal recurrence of carcinoma of the cervix treated radiologically has been proposed for some time.

Tumor Clinic records at the University of Arkansas Medical Center have been reviewed for carcinoma of the vagina occurring five or more years following treatment of carcinoma of the cervix with radiation therapy.

Records of patients treated surgically for in-situ and Stage I lesions during the same period of time have been reviewed for comparison.

The literature has been reviewed in regard to this problem and although found brief and wanting, statistical comparison has been made where possible.

### CONCLUSIONS

1. Three of 403 patients treated radiologically for Stage I-II carcinoma cervix were noted to develop invasive epidermoid carcinoma of the vagina five or more years post therapy, an incidence of 0.7 percent.
2. One of 77 patients treated surgically for Stage 0-I carcinoma cervix developed vaginal carcinoma five or more years post therapy, an incidence of 1.3 percent.
3. Late vaginal carcinoma has been found to occur only rarely after radiological treatment of cervical carcinoma. Because of the small numbers in our study no conclusions can be

drawn as to whether this form of treatment was an important etiological factor.

#### BIBLIOGRAPHY

1. Arneson, A. N. and Williams, C. F. Long-term Follow-up Observations in Cervical Cancer. Amer. J. Obst. & Gynec. 80:775-90, 1960.
2. Corscaden, James A. Gynecologic Cancer. Third Ed. Williams & Wilkins, Baltimore 1962, p. 178.
3. Cromer, J. K. The Role of Surgery in the Management of the Late Vaginal Recurrence Following Irradiation and/or Surgical Treatment of Carcinoma of the Uterine Cervix. Am. J. Surgery 23:920-7, 1957.
4. Fennell, R. H., Jr. Carcinoma in Situ of the Uterine Cervix. Cancer 9:374-384, 1956.
5. Hynes, J. F. Cancer of Cervix Uteri & Vagina: Late Local Recurrence or Late Radiation Cancer. Delaware Med. J. 35:1-4, 1963.
6. Koss, C. G., Melamed, M. R. & Daniel, W. W. In Situ Epidermoid Carcinoma of the Cervix and Vagina Following Radiotherapy for Cervical Cancer. Cancer 14:353-60, 1961.
7. Latour, J. P. & Fraser, W. D. The Problem of Late Local Recurrence of Carcinoma of the Cervix. Canad. J. Surg. 4:508-11, 1961.



#### CORRECTION

In the April 1967 issue of the Journal of the Arkansas Medical Society, the article regarding the retirement of Dr. I. R. Johnson should have read "Dr. I. R. Johnson of Blytheville retired from the active practice of medicine on 'January 31, 1967.' Dr. Johnson has practiced in Blytheville since 1916. He is 78 years old." The article incorrectly listed Dr. Johnson as being from Batesville.

#### Adrenalectomy for Metastatic Mammary Carcinoma

E. Wilson (Sydney Hospital, Sydney, Australia) *Med J Aust* 1:193-197 (Feb) 1967

A series of 25 cases of patients who underwent total adrenalectomy for metastatic mammary carcinoma includes one patient for whom this procedure has kept the malignant process at bay since April 1955. Survival times of 100 patients operated upon throughout New South Wales more than five years ago are given. Great benefit may result from total adrenalectomy in patients who are nearing the menopause and in whom limited metastases have appeared some years after removal of a mammary carcinoma.

#### Sodium Excretion in the Nephrotic Syndrome

W. J. Oliver (Dept of Pediatrics and Communicable Diseases, University Hosp, Univ of Michigan Medical Center, Ann Arbor) and C. L. Owings *Amer J Dis Child* 113:353-363 (March) 1967

Eight children, receiving a liberal salt diet, were studied during exacerbation and remission of the nephrotic syndrome. A significant correlation between sodium excretion and aldosterone excretion was demonstrated. Less striking correlations with respect to serum albumin or creatinine clearances were found. Such data suggest that factors other than serum albumin or glomerular filtration rate regulate aldosterone and urinary sodium in this disease.

#### Shock as a Complication of the Nephrotic Syndrome

T. J. Egan et al (2300 Children's Plaza, Chicago) *Amer J Dis Child* 113:364-368 (March) 1967

Hypovolemic shock in four nephrotics was found to correlate poorly with the level of serum protein, and with the degree of proteinuria. Hyporesponsiveness of the pituitary-adrenal axis was demonstrated in three of the four patients tested; the fourth patient was not tested. Treatment with glucocorticoid was efficacious on therapy of the shock.



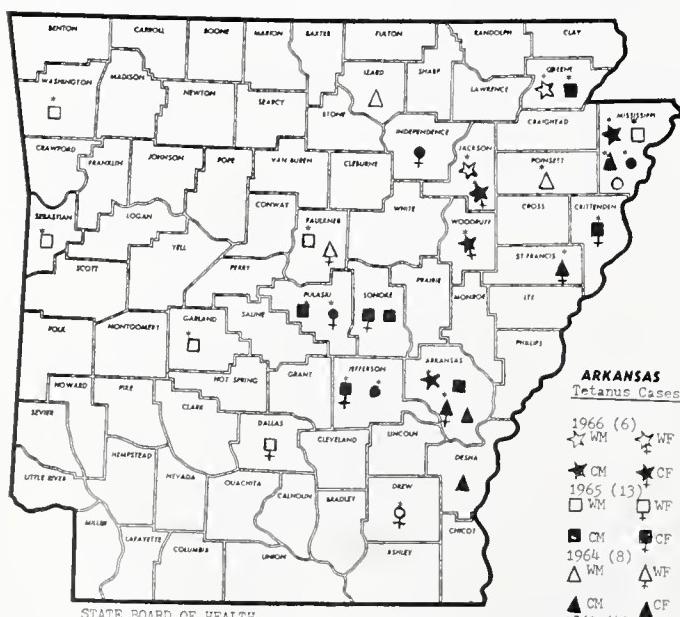
## PUBLIC HEALTH AT A GLANCE

### TETANUS

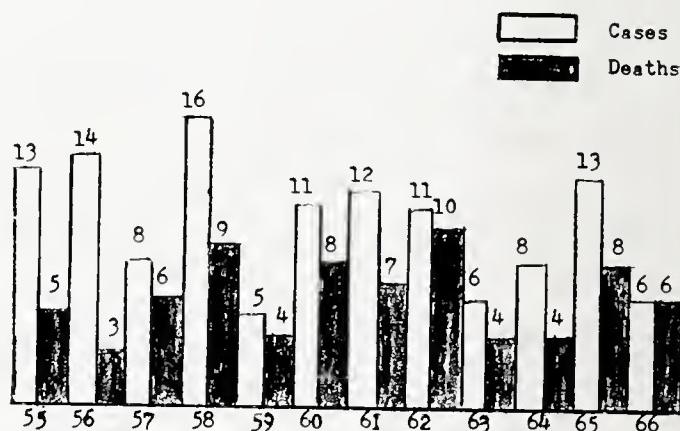
Tetanus is an acute disease induced by toxin of the bacillus *Clostridium tetani* growing anaerobically usually at the site of an injury. The classical symptoms give it the common name of lockjaw. History reveals that the disease has a variable fatality rate according to age of the patient, being more severe in the extremes of life and to the length of incubation where there appears to be greater fatality rates with the more rapidly growing colony of organisms.

1966 was a year of very poor experience for Arkansans who were unfortunate enough to acquire tetanus, since there was 100% fatality. Depicted on the bar graph for the last 10 years are the Arkansas cases with the number of deaths.

One neonatal case occurred and 3 cases were over 70 years during 1966. The 57-year-old woman's case was notable in that she was a diabetic.



REPORTED CASES AND DEATHS - 1955-1966



The 47-year-old man who had no evidence of a wound at autopsy was a laborer doing "public work" as the occasion demanded. Thus we can re-emphasize the need for immunizing all pregnant women, young children, older adults and those with outdoor interests or occupations. Yes, this spells out almost everyone.

It is well known that natural immunity does not follow a case of tetanus nor from having the organisms growing in the intestine. Therefore, the only practical answer to the inevitable danger of tetanus is active immunization of the entire population. Of course, supplies of human origin tetanus antitoxin are reportedly adequate now and there should no longer be a need for the heterogenic serums in this country.

Although many school children are protected against tetanus through the use of DTP, it is estimated that there are 4,500,000 children in the United States from one through four years of age that are not protected. Ex-servicemen and women constitute a large segment of our population of

adults known to have been immunized against tetanus, but it is feared that many have failed to have boosters and may no longer be protected. The series need never be started over, so with a small effort, we can return this group to the ranks of the adequately immunized population. Advise your patients to carry their immunization record at all times.

A more detailed article on Tetanus in Arkansas appeared in the December, 1963 Journal of the Arkansas Medical Society.

## TETANUS

Reported Cases by County, Age, Sex, Race, Fatalities, and Source of Infection, 1966.

County	Age	Sex	Race	Died	Source of Infection
Woodruff	57	F	C	X	Diabetic Gangrene of toe.
Mississippi	73	M	C	X	Gangrene in toe due to frostbite.
Jackson	78	M	C	X	Dropped cane on toe cutting it.
Jackson	2 wks.	F	C	X	Imbilicus
Arkansas	47	M	C	X	Unknown puncture
Greene	81	F	W	X	wound of foot.



### Autonomous Functioning Nodules and Thyrotoxicosis

I. Hales et al (Institute of Medical Research, Royal North Shore Hosp of Sydney, Sydney, Australia) *Med J Aust* 1:198-201 (Feb) 1967

A series of 20 patients with autonomous functioning nodules is reported. The diagnosis is based on the demonstration of a radioisotope scan showing the nodule to be the major functioning tissue, and the surrounding tissue to be suppressible by the administration of thyroid hormone and stimulatable by the administration of thyroid stimulating hormone. Radioiodine uptake in the nodule is not suppressible, or only partially suppressible. The final proof of it is the return of the nodule to a state of normal physiological activity after radioiodine therapy or thyroidectomy. These nodules are particularly suitable for management by suppressive doses of thyroxine together with therapeutic doses of radioiodine, and in adults this is the treatment of choice; thyroidectomy is advised for younger patients, or for those in whom malignant change is suspected.

### Depressant Effect of Cigarette Smoke on Alveolar Macrophages

G. M. Green and D. Carolin Channing Lab, Boston City Hosp, 818 Harrison Ave, Boston) *New Eng J Med* 276:421-426 (Feb 23) 1967

Cigarette smoke was found to inhibit the phagocytic activity of rabbit alveolar macrophages for *Staphylococcus albus* in an in vitro system. Inhibition began when 2 ml of smoke was added to a 30 ml flask, and increased to a maximum at 8 ml of smoke. Different brands showed differences in this toxic activity amounting to two- to threefold in some instances. Cigarette smoke also caused separation of the macrophages from the flask surface. The toxic activity of smoke was identifiable in the gaseous and water soluble fraction, and was recovered in the aqueous phase. Some isolated components of smoke such as nicotine and the ciliastatic agents formaldehyde and acetaldehyde did not inhibit the alveolar macrophages. Cigarette smoke may depress host resistance to pulmonary infection similarly in vivo by a direct inhibitory action on this intrapulmonary phagocytic defense mechanism.



## EDITORIAL

# OSTEOPOROSIS

Alfred Kahn, Jr., M.D.

R. P. Heaney (American Journal of Medicine, Volume 39, Page 877, December, 1965) has offered "A Unified Concept of Osteoporosis" in an editorial. Heaney criticized Fuller Albright's work in which he postulated that osteoporosis was an inadequacy of bony matrix on which the calcium was deposited; this contrasted with osteomalacia in which there was adequate matrix but inadequate calcium available. Cases of osteoporosis and not osteomalacia were cited due to calcium deficiency. Also, it is reported that radioactive calcium reveals normal new bone formation in senile osteoporosis. Heaney defines osteoporosis as "a decrease in the total mass of bone below levels needed for mechanical support". Calcium homeostasis has to do with ionized calcium not bone mass and the bone mass varies according to the calcium homeostatic balance. Heaney further stresses the inter-relationship of bone formation and resorption; or, saying it differently, if the rate of calcium absorption equals calcium loss, no additional calcium will be needed to be withdrawn from the skeletal system, but if insufficient calcium is absorbed for the body's needs the skeletal system will have to give up calcium. Ultimately, osteoporosis can be classified into homeostatic in which the skeletal has to give up calcium due to inadequate calcium absorption and non-homeostatic in which the calcium of the skeletal is reduced but without regard for the needs of the body for ionized calcium as disuse osteoporosis, inflammations, etc.

Fluorides have been a controversial subject in the treatment of human diseases. Excessive use is poisonous. A moderate amount seems to promote healthy teeth; too much fluoride produces mottled teeth. The use of fluorides has been recommended in the treatment of decalcifying skeletal diseases as multiple myeloma, Paget's Disease,

etc. The effect of therapeutic dosages of fluorides on patient's with osteoporosis has been reported by Burnstein and Cohen (Journal of Clinical Endocrinology, Volume 27, Page 197, February, 1967). These authors set up a program to determine the balance of calcium and phosphorous before and after fluoride therapy, the effects of adding Vitamin D2 and the study on bone by x-ray crystallography and histology. Burnstein and Cohen found that fluorides do reduce the amount of calcium in the urine. They feel that it is due to the effect of fluoride on the skeleton; it is postulated that the fluoride increases both bone formation and resorption but the former to a greater degree thus accounting for the positive calcium balance. The authors x-ray studies indicated some variability of pattern but in the spine denser bone did appear with fluoride treatment. X-ray diffraction studies from biopsy revealed that when fluoride is taken up by bone a better crystalline structure is obtained. Bone biopsies indicate that fluoride treatment increases the number of sites of bone formation but "the amount of bone formed per osteon per unit time as measured by tetracycline labeling is slightly less than prior to fluoride administration".

Of interest to the understanding of metabolic bone disease is the technique of quantitative microradiography. This is discussed in an editorial by Jenifer Jowsey (American Journal of Medicine, Volume 40, Page 485, April, 1966). As the author points the structure of bone is determined by the balance of bone formation and bone resorption. It is difficult by conventional methods to determine this balance, however using microradiography this can be accomplished; the limitations of the method are that the area of biopsy may not be a representative sample and secondly, the rate of formation and resorption

cannot be quantitated as would be expected in the normal young patients bone formation exceeded resorption; on the elderly, the reverse obtained. In osteoporosis, the bone resorption exceeded bone formation — that is, there was increased bone resorption. In contrast, in hyperparathyroidism and hyperthyroidism, bone for-

mation is increased; bone formation is decreased in hypoparathyroidism and Cushing's Disease.

The conventional ideas concerning osteoporosis and some of the other bone disorders are now having to undergo revision in the light of newer information and newer methods of study. Osteoporosis is just such an example.

## MEDICINE IN THE NEWS



### National Institutes of Health Training Grants, 1958-1967

The National Institutes of Health (NIH) in 1966 awarded training grants totaling \$111.5 million to United States medical schools; the estimated amount is \$119.5 million for fiscal 1967. The 1966 figure exceeded the previous year's level

by 15 per cent continuing the upward trend of recent years. In 1966 the grants in support of research training accounted for 90 per cent of the total; the remaining 10 per cent of the grants were in support of undergraduate training (often referred to as teaching grants).

Table 1 presents the annual amounts awarded

TABLE I  
GRANTS FOR UNDERGRADUATE AND RESEARCH TRAINING AWARDED BY THE  
NATIONAL INSTITUTES OF HEALTH TO U.S. MEDICAL SCHOOLS  
1958-1967

Year	Dollar Amounts in Millions			Percentage Distribution		
	Under-graduate Training	Research Training	Total	Under-graduate Training	Research Training	Total
1958	\$ 6.2	\$ 12.9	\$ 19.1	32.5%	67.5%	100%
1959	6.5	17.8	24.3	26.7	73.3	100
1960	6.6	30.2	36.8	17.9	82.1	100
1961	6.8	48.1	54.9	12.4	87.6	100
1962	7.4	53.0	60.4	12.2	87.8	100
1963	7.6	63.5	71.1	10.7	89.3	100
1964	11.1	76.5	87.6	12.7	87.3	100
1965	8.9	88.3	97.2	9.2	90.8	100
1966	11.5	100.0	111.5	10.3	89.7	100
*1967	12.0	107.5	119.5	10.0	90.0	100

\*Estimated.

Source: Resources Analysis Branch, Office of Program Planning, National Institutes of Health.

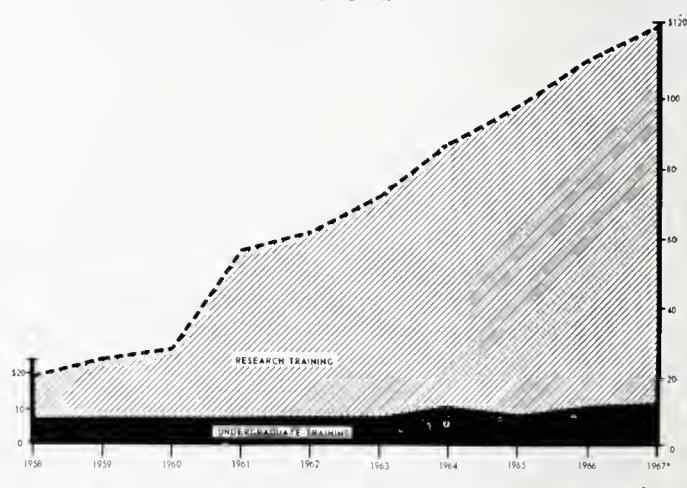
since 1958, and also shows the percentage distribution by type of training grant.

Figure 1 depicts the increase in training grant awards made by the NIH in the years 1958 to 1967. Also shown are the relative proportions of training grant awards made in support of research training as compared with undergraduate training.

The training grant programs of the NIH and other federal and nonfederal agencies have been one of the most important factors in the development and training of medical school faculty. This is an area that warrants increasing attention. With 1,100 budgeted full-time faculty vacancies reported in 1965-66 by the existing United States medical schools plus the emerging faculty personnel needs of the 15 new medical schools now under construction, the need for the development and training of future medical school facul-

ty is already urgent. The need will become more urgent, for it is anticipated that an additional ten medical schools will have been started by 1975 or 1980.

FIGURE 1



Grants for Undergraduate and Research Training Awarded by the National Institutes of Health to U.S. Medical Schools, 1958-1967 (in Millions of Dollars).



### Identification of Tissue Lipids in Lipoid Dermatoarthritis

M. V. Barrow et al (Health Center, Box 705, Gainesville, Fla) *Amer J Clin Path* 47:312-325 (March) 1967

Biochemical fractionations of tissue lipids were performed upon biopsy specimens from a patient with lipoid dermatitis. The involved tissues contained an average of 16% lipid (wet weight). The lipid deposits consisted of a mixture of triglycerides (51%), cholesterol esters (25%), free cholesterol (2%), and phospholipids (22%). Thin-layer chromatography of the phospholipids revealed approximately equal proportions of sphingomyelin, lecithin, and cephalin. Only traces of glycolipids could be detected. Histochemical studies demonstrated lipid-laden multinucleated giant cells and histiocytes containing phospholipids and neutral fats. Staining reactions for glycolipids or mucopolysaccharides were

negative. These investigations indicate that lipoid dermatitis is appropriately classified among the granulomatous lipid-storage diseases.

### Effects of Hypocapnia and Hypercapnia on Intracellular Acid-Base Equilibrium in Man

F. Manfredi (Dept of Medicine, Indiana Univ School of Medicine, Indianapolis) *J Lab Clin Med* 69:304-312 (Feb) 1967

Intracellular "mean" ( $H^+$ ) and "apparent" ( $HCO_3^-$ ) were determined in five normal subjects at rest, during acute steady-state respiratory alkalosis, and during acute steady-state respiratory acidosis. It was found that acute steady states of hypocapnia and hypercapnia, comparable in degree to those frequently encountered clinically, are characterized, respectively, by intracellular alkalosis proportional to the observed extracellular alkalosis, and by intracellular acidosis more marked than the observed extracellular acidosis.

# T U B E R C U L O S I S

# A B S T R A C T S



Sponsored by Arkansas Tuberculosis Association

## PULMONARY LESIONS AFTER OXYGEN THERAPY AND ARTIFICIAL VENTILATION

*Lungs of patients who died after prolonged artificial ventilation revealed a common denominator of pulmonary changes in many of those studied. These changes were correlated with the duration of exposure to high concentrations of oxygen and pathologically were similar to those seen in experimental oxygen toxicity in animals.*

Clinicians concerned with the care of patients requiring mechanical artificial ventilation have been impressed by the occasional development of gradually progressive deterioration of pulmonary function, apparently unrelated to the disease that necessitated the respiratory assistance.

These patients have increasing reduction in pulmonary compliance and vital capacity, with subsequent hypoxia; are difficult to wean from the ventilator and often die of pulmonary insufficiency. Clinicians have referred to this symptom complex as the "respirator lung syndrome." This study was undertaken to determine whether there is a corresponding pathological picture and, if so, to characterize it and attempt to determine its pathogenesis.

Lungs of 70 patients who had come to autopsy after prolonged mechanical artificial ventilation were compared with lungs of comparable patients who had not received such therapy. Combined lung weight and descriptions of the gross appearance of the lung were obtained from the autopsy record. Slides of specimens were reviewed independently of the clinical background of the patients.

The lungs in the study group tended to be much heavier than those in the control group. Study group lungs had an average combined weight of 1697 grams as compared with an average control weight of 1176 grams. This difference was highly significant.

Gerald Nash, M.D.; John B. Blennerhassett, M.B.; and Henning Pontoppidan, M.D. *The New England Journal of Medicine*, February 10, 1967.

## "HEAVY LUNGS"

Study group lungs weighing more than 1800 grams ("heavy lungs") were frequent. They tended to be deeply congested, inelastic, noncrepitant, and of markedly increased consistency, with the appearance of "beefy" consolidation on cross section. The few heavy control group lungs did not have this appearance, but were typical of either "watery" pulmonary edema or extensive nodular and confluent bronchopneumonia.

Study group lungs frequently showed several unusual microscopic changes which did not appear, or appeared rarely, in control lungs. There seemed to be two microscopic phases, which merged and were not distinct. An early exudative phase was characterized by congestion, alveolar edema, intra-alveolar hemorrhage, and a fibrin exudate, with the formation of prominent hyaline membranes without an associated inflammatory component.

A later proliferative phase was characterized by marked alveolar and interlobular septal edema and fibroblastic proliferation, with early fibrosis and prominent hyperplasia of the alveolar lining cells. The alteration was associated with only a mild-to-moderate component of lymphocytes without evidence of infection. This histologic pattern was distinctive and did not resemble either organizing pneumonia or the dense collagenization of septa often seen in association with emphysema or postinfective scars. This severe interstitial edema and early fibrosis were present in 23 cases in the study group and in only one in the control population.

## FACTORS CORRELATED

When the gross and microscopic pathologic findings were correlated with the clinical data, it became apparent that they were not related to the duration of artificial ventilation per se. They were, however, correlated with prolonged ventilator therapy when high (90 to 100 per cent) concentrations of oxygen were used. The data suggested that as the duration of treatment with

high concentrations of oxygen increased, so did the incidence of "heavy lungs" (combined weight over 1800 grams), hyaline membranes, interstitial edema, and early fibrosis. Since the use of the respirator was not correlated with production of the pulmonary lesion, the term "respirator lung syndrome" is probably a misnomer.

Experiments have shown that oxygen in high concentrations (exceeding about 0.6 atmosphere) is toxic to the lungs of a variety of animals; the pathologic picture in these animals closely resembles that seen in the exudative phase in the patients in this study. The proliferative, fibrotic phase has no known experimental counterpart. For obvious reasons, the experimental exposure of man to toxic levels of oxygen has not been carried to the stage of severe pathologic damage.

Isobaric oxygen (100 per cent oxygen at 1 atmosphere) has caused symptoms such as substernal distress, cough, and decrease in vital capacity in persons exposed for periods of approximately 6 to 30 hours. Pure oxygen at a reduced pressure of about 250 mm. of mercury has been breathed by normal men for up to 30 days without producing pulmonary changes, and many observers have stated that man could probably tolerate oxygen at partial pressures below 425 mm. of mercury approximately 60 per cent at 1 atmosphere) indefinitely without the development of symptoms of oxygen toxicity. However, more recent reports have described the development of symptoms of oxygen toxicity after prolonged exposure to oxygen tensions as low as 176 mm. of mercury.

The morphologic alterations found appear to provide an explanation for the marked deterioration in pulmonary function observed during life in most of these cases and might account in part for the difficulty in weaning such patients from artificial ventilation. Both oxygen concentration and the duration of exposure appeared to be important factors in the development of the pulmonary lesions.

#### *MONITORING INSPIRED OXYGEN*

It should be emphasized that this study has not established a definite cause and effect relationship between the characteristic pathologic appearance and any facet of therapy. In view of the severe and complicated pathologic states encountered and the multifaceted treatment invariably required in such cases, many etiologic factors could theoretically have been responsible for the pathologic changes. However, although safety limits for the administration of oxygen in man have not been determined, the use of 90 to 100 per cent oxygen for a prolonged period is probably hazardous.

Optimal treatment demands the use of oxygen concentrations sufficient to insure normal or near normal arterial oxygen tension. Such therapy should not be withheld for fear of possible toxic effects on the lungs or other organs, but the inspired oxygen concentration should be monitored and reduced as soon as arterial blood gas measurements show that the reduction can be accomplished safely.



July, 1967

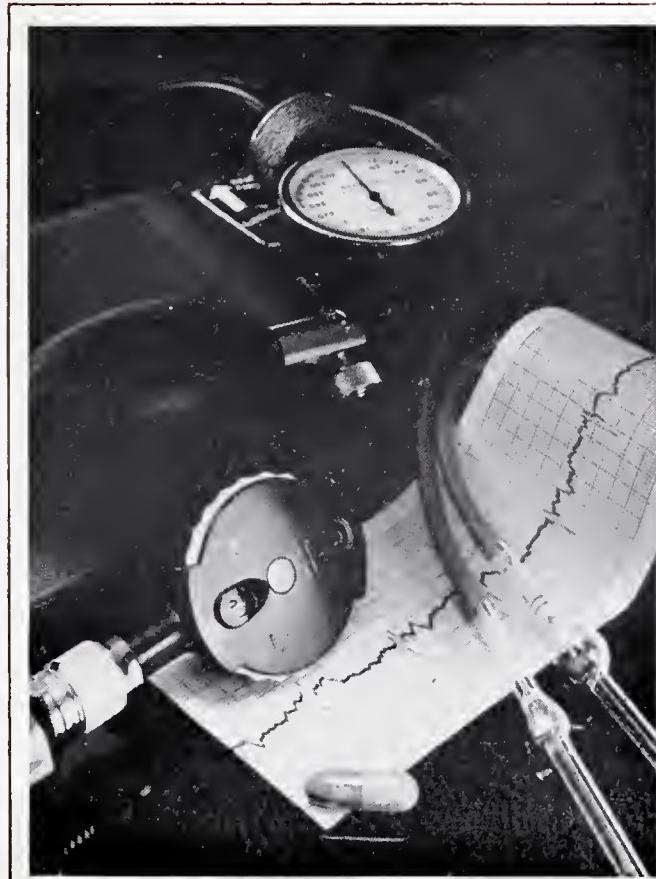
U.C. MEDICAL LIBRARY  
AUG 1 1967  
San Francisco 22,

# THE JOURNAL OF THE Arkansas MEDICAL SOCIETY

Vol. 64 No. 2

FORT SMITH, ARKANSAS

McClosel School Library  
University of California  
San Francisco, California  
94122



Among the adjuncts to the physician's skill

## Darvon® Compound-65

Each Pulvule® contains 65 mg. propoxyphene hydrochloride,  
227 mg. aspirin, 162 mg. phenacetin, and 32.4 mg. caffeine.



Additional information available to the medical profession upon request.  
ELI LILLY AND COMPANY, INDIANAPOLIS, INDIANA 46206  
700992

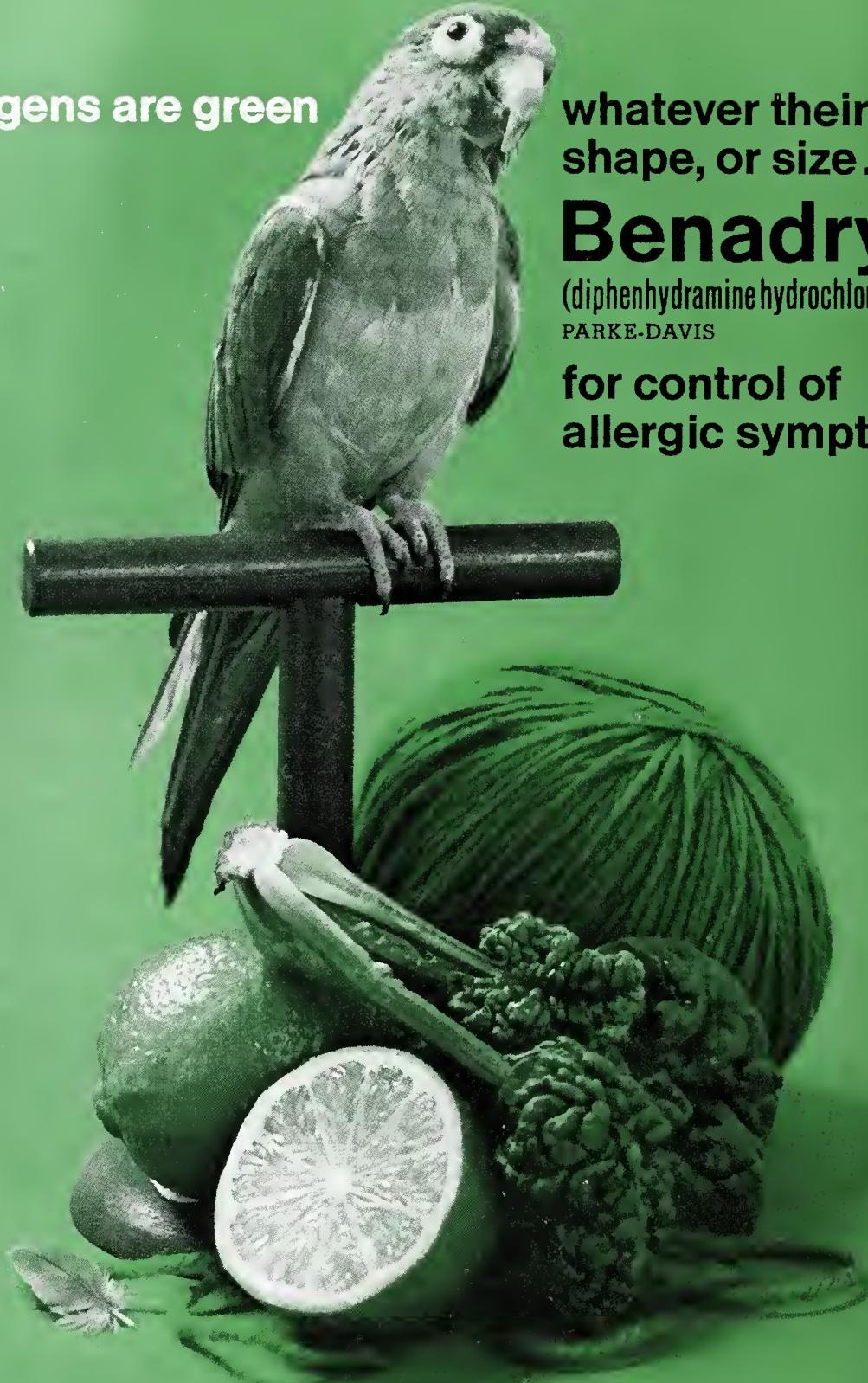
**some allergens are green**

**whatever their color,  
shape, or size...**

**Benadryl®**  
(diphenhydramine hydrochloride)

PARKE-DAVIS

**for control of  
allergic symptoms**



Whether the allergen is greenish or garish, unseen or unknown, your patient can get symptomatic relief with BENADRYL—the potent antihistamine with antispasmodic action. *INDICATIONS:* Antihistaminic, anti-spasmodic, antitussive, and antiemetic therapy.

*PRECAUTIONS:* Persons who have become drowsy on this or other antihistamine-containing drugs, or whose tolerance is not known, should not drive vehicles or engage in other activities requiring keen response while using this product. Hypnotics, sedatives, or tranquilizers if used with diphenhydramine hydrochloride should be prescribed with caution because of possible additive effect. Diphenhydramine

has an atropine-like action which should be considered when prescribing diphenhydramine hydrochloride. *ADVERSE REACTIONS:* Side effects are generally mild and may affect the nervous, gastrointestinal, and cardiovascular systems. Drowsiness, dizziness, dryness of the mouth, nausea, nervousness, palpitation, blurring of vision, vertigo, headache, muscular aching, thickening of bronchial secretions, restlessness, and insomnia have been reported. Allergic reactions may occur.

BENADRYL is available in Kapsseals® of 50 mg. and Capsules of 25 mg.

00867

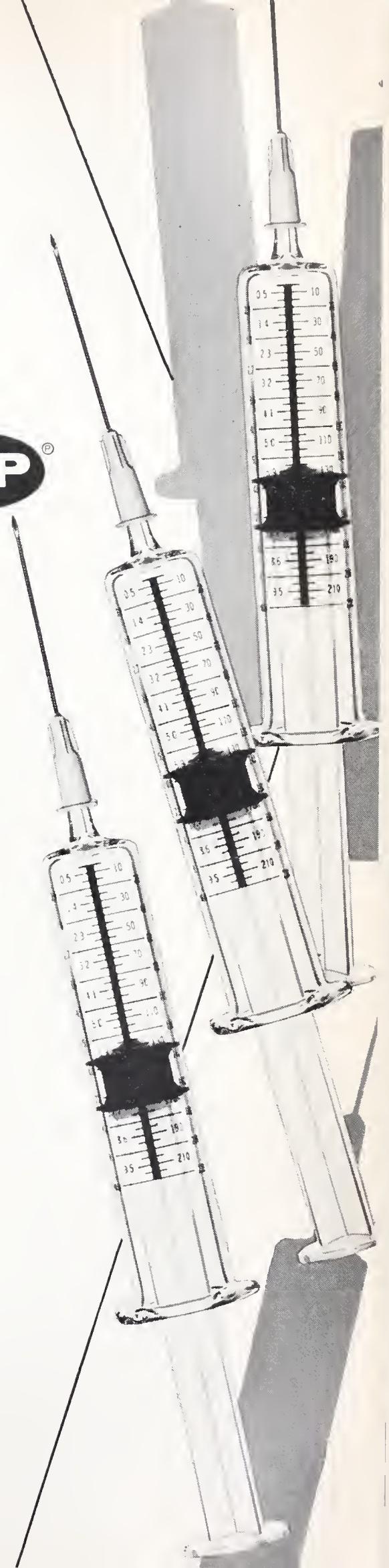
The pink capsule with the white band is a trademark of Parke, Davis & Company.

**PARKE-DAVIS**

# **BSP® DISPOSABLE UNIT**

**HW&D BRAND OF SODIUM SULFOBROMOPHTHALEIN INJECTION, USP**

(50 mg. per ml.)



**BROMSULPHALEIN®**  
**IN A COMPLETE,**  
**STERILE,**  
**DISPOSABLE,**  
**& ECONOMICAL**  
**PATIENT-UNIT.**

Each BSP Disposable Unit contains a sterile syringe with the 5 mg./kg. BSP dosage schedule imprinted on the barrel, a sterile needle, alcohol swab and a 7.5 ml. or 10 ml. size ampule of terminally sterilized Bromsulphalein solution.

This all-inclusive disposable put-up lessens the chance of cross-infection and saves time and labor—the most costly commodities.

**HYNSON, WESTCOTT & DUNNING, INC.**



(BSP03)

BALTIMORE, MARYLAND 21201

**THE  
JOURNAL OF THE  
Arkansas  
MEDICAL SOCIETY**

Owned by  
**THE ARKANSAS MEDICAL SOCIETY**  
And Published Under Direction of the Council

**ALFRED KAHN, JR., M.D., Editor**  
**1300 West Sixth Street Little Rock, Arkansas**  
**MR. PAUL C. SCHAEFER, Business Manager**  
**218 Kelley Bldg. Fort Smith, Arkansas**  
**LITTLE ROCK BUSINESS OFFICE**  
**114 E. Second St. Little Rock, Arkansas**

**OFFICERS OF THE ARKANSAS MEDICAL SOCIETY**  
JOSEPH A. NORTON, President ..... Little Rock  
H. W. THOMAS, President-Elect ..... Dermott  
JEROME LEVY, First Vice President ..... Little Rock  
DAVID H. PONTIUS, Second Vice President ..... West Memphis  
GEORGE F. WYNNE, Third Vice President ..... Warren  
ELVIN SHUFFIELD, Secretary ..... Little Rock  
W. R. BROOKSHER, Secretary Emeritus ..... Fort Smith  
BEN N. SALTZMAN, Treasurer ..... Mountain Home  
JOHN P. PRICE, Speaker, House of Delegates ..... Monticello  
AMAIL CHUDY, Vice Speaker,  
House of Delegates ..... North Little Rock  
ALFRED KAHN, JR., Journal Editor ..... Little Rock  
JAMES M. KOLB, SR., Delegate to AMA ..... Clarksville  
JACK KENNEDY, Delegate to AMA ..... Arkadelphia  
C. C. LONG, Alternate Delegate to AMA ..... Ozark  
ALFRED KAHN, JR., Alternate Delegate to AMA ..... Little Rock  
MR. PAUL C. SCHAEFER, Executive Vice President,  
P.O. Box 1208 ..... Fort Smith

**COUNCILORS**  
First District ELDON FAIRLEY ..... Osceola  
Second District B. P. RANFAY ..... Jonesboro  
Third District PAUL GRAY ..... Batesville  
HUCH R. EDWARDS ..... Scary  
Fourth District PAUL MILLAR ..... Stuttgart  
L. J. P. BELL ..... Helena  
Fifth District T. E. TOWNSEND ..... Pine Bluff  
LEE B. PARKER ..... McGehee  
Sixth District KENNETH R. DUZAN ..... El Dorado  
PAUL SIZMORE ..... Magnolia  
Seventh District KARLTON H. KEMP ..... Texarkana  
JOHN P. WOOD ..... Mena  
Eighth District JACK KENNEDY ..... Arkadelphia  
ROBERT F. McCRARY ..... Hot Springs  
Ninth District WILLIAM PAYTON KOLB ..... Little Rock  
JAMES R. MORRISON ..... Little Rock  
Tenth District STANLEY APPLEGATE ..... Springdale  
ROSS FOWLER ..... Harrison  
C. C. LONG ..... Ozark  
A. S. KOENIG ..... Fort Smith

The Advertising policy of this JOURNAL is governed by the PRINCIPLES OF ADVERTISING of the State Medical Journal Advertising Bureau, Inc., by the Advertising Committee of the Bureau and by the Council of the Arkansas Medical Society.

*EXCLUSIVE PUBLICATION—Articles are accepted for publication on the condition that they are contributed solely to this JOURNAL.*

*COPYRIGHT 1967—By the JOURNAL of the Arkansas Medical Society.*

*NEWS—Our readers are requested to send in items of news, also marked copies of newspapers containing matter of interest to the membership.*

## SCIENTIFIC ARTICLES

Meiosis as a Means of Cell Division in Human Testicular and Ovarian Neoplasms	57
<i>Anderson Nettleship, M.D.</i>	
Virus Induced Cataracts	59
<i>Ruth Jarman, Calvin Hanna, Carl E. Duffy, James G. Keatts and Oddist D. Murphy</i>	
Replacement of Esophagus by Right Colon	61
<i>Carlos H. Rivarola, M.D. and H. Scott McMahan, M.D.</i>	
What AMS Does for You	65
<i>Joseph A. Norton, M.D.</i>	

## FORUM FROM THE DEPT. OF OBGYN

Residual Carcinoma in Situ of the Cervix Following Cold Knife Conization	69
<i>W. Ragon Thompson, M.D. and Mary W. Dulaney, M.D.</i>	

## TEACHING AT SEMINAR

Bacterial Endocarditis at the University of Arkansas Medical Center	74
<i>David M. Johnson, M.D.</i>	

## FEATURES

What Is Your Diagnosis?	78
<i>Electrocardiogram of the Month</i>	
Arkansas Public Health at a Glance	79
<i>Editorial</i>	
Medicine in the News	80
<i>Letters to the Editor</i>	
Announcements and Things to Come	84
<i>Personal and News Items</i>	
Obituary	85
<i>Proceedings of Societies</i>	
New Members	87
<i>Women's Auxiliary</i>	

# Meiosis As a Means of Cell Division in Human Testicular and Ovarian Neoplasms

Anderson Nettleship, B.Sc., M.D.\*

Antaeus Lineal Research Associates, 1948  
and Veterans Administration Hospital Laboratory,  
Fayetteville, Arkansas 72701

"In the testis, more notably than in any other organ, it is possible to maintain a single embryogenic origin of the great majority of tumors. It appears that all the common and nearly all the rarer of the tumors of this organ arise from the totipotent sex-cells . . ."

J. Ewing, NEOPLASTIC DISEASES,  
4th Ed., 1942, 854.

Most modern theories of malignant cell change are based upon somatic mutation or similar theories which gives strong consideration to mitosis as being the chief means of cell multiplication in neoplasms. If it could be demonstrated that some malignant tumors of the testis and ovary multiply through the mechanism of meiosis it would then become necessary to reconsider many current theories of malignant transformation. Meiosis malignant cell alteration would automatically utilize this route to malignant transformation and would evoke a "non-mitotic" means of neoplastic cell transformation. As of this date I have been unable to find any report in the literature on this subject. There are a few studies on human meiosis, Edwards (1963), Ford and Hamerton (1956) and Chu and Giles (1959), and some recent ones on testicular and ovarian chromosomes, Martineau (1966), Ishihara, et al. (1963) and Stevens and Bunker (1964). In none of these have my observations been made on the occurrence of meiosis.

Last August while examining a testicular tumor, in preparation for a surgical pathology conference, I was troubled to discover that I could not recognize normal or abnormal mitotic figures in this tumor. Closer examination demonstrated that, in this particular tumor, the cell division was proceeding along the lines of meiosis instead of mitosis. I was aware of the possibility that this occurrence might exist since we are doing numerous chromosome studies in the laboratory,

and Ewing's theory had been in my mind for a long time. Many years of examining human neoplasia, in the diagnosis of this disease, however, had caused me to simply note unusual karyotypes in such tumors. After making the above observations I felt it was important to examine additional tumors.

An examination of thirteen human testicular tumors showed eight with meiotic activity, and five with mitotic activity. Those tumors which grew into maturing teratomas showed mitosis, those with strictly early embryoma cell characteristics showed meiosis. Since this preliminary discovery we have continued to check the literature, although there are other studies on the topic, not one has approached the problem in this fashion Edwards (1963), Martineau (1966), Corfman and Richart (1964) and Galton (1959).

Due to good fortune it was possible to culture a human ovarian neoplasm, the cells on culture showed the same meiotic traits as seen in testicular tumors. The nice part about the ovarian culture was that we were able to develop advanced meiotic phase figures with metaphase circlets and clearly defined pachytene figures. The XX bivalent in the female was clearly delineated and the nuclei in the cells of all ovarian tumors showed sex chromatin. No sex chromatin was found in the testicular tumors.

We found that in both ovarian and testicular neoplasms, in the categories described, that interkinesis figures were the most common. This is as might be expected since a long interphase is found

\*P.O. Box 35, Fayetteville, Arkansas 72701

in these cells. As of this date, we have not yet cultured testicular tumors, we cannot speak of their meiotic figures beyond the zygotene and diakinesis phases found in direct human material.

If the above observation can be extended and collated their significance to the broad field of human and animal neoplasms will be established. To prove that neoplasms can originate, grow, survive and metastasize through the mechanism of meiosis rather than mitosis places the whole question of the pathogenesis of neoplasia, in this category, in a new light. If meiosis, in which the inheritable chromosome material is divided unequally, is one route of neogenesis then somatic mutation or chromosome aberrations cannot always be held accountable for neoplasia.

It will be interesting to pursue the matter of culturing testicular tumors of the embryoma type since the previous publication on this was taken from teratomas which showed mitotic activity, Martineau (1966). It is important to establish if meiosis is an important mechanism in the genesis of both ovarian and testicular tumors since it is not known at present whether these neoplasms have a common or separate histogenesis. If it can be shown that testicular and ovarian neoplasms originate meiotically, a very early embryonic genesis for both types of neoplasia is suggested. It is hoped to present these added observations at a later date.

If neogenesis is an intrinsic property of all cells, at all stages of development, including gamet formation, carcinogenesis and teratogenesis are tied even more closely together than had been previously considered. Cytoplasmic factors are brought into light as attractive features, in the formation of neoplasia. Finally, the discovery of meiosis as a route for neoplasia opens a new experimental frontier for a re-attack upon the problem of new growth in man and animals.

#### REFERENCES

1. Chu, E. H. Y. and Giles, N. H. (1959). Human chromosomes complement in normal somatic cells and cultures, Am. J. Hum. Genet. 11, 63.
2. Corfman, P. A. and Richart, R. M. (1964). Chromosome number and morphology of benign ovarian cystic teratomas, New Eng. J. 271, 1241.
3. Edwards, J. H. (1963). Meiotic investigations in man, Nature 199, 1114.
4. Ford, E. and Hamerton, J. L. (1956) Chromosomes of man, Nature 178, 1020.
5. Galton, M., et al. (1959) Forty-6 chromosomes in an ovarian teratoma, Lancet 2, 761.
6. Ishihara, T., et al. (1963) Chromosome of twenty cancer effusion: correlation of karyotypic, clinical and pathological aspects, J. Natl. Cancer Inst. 30, 1303.
7. Martineau, M. (1966) A similar marker chromosome in testicular tumors, Lancet 1, 839.
8. Stevens, L. C. and Bunker, M. C. (1964) Karyotype and sex of primary testicular teratomas in mice, J. of Natl. Cancer Inst. 33, 65.



#### **Neonatal Manifestations of Hereditary Spherocytosis—**

J. I. Trucco and A. K. Brown (Medical College of Georgia, Augusta) *Amer J Dis Child* 113:263-270 (Feb) 1967

An attempt was made to analyze the natural history of hyperbilirubinemia in the newborn period. In this group the majority of diagnoses were made in the nursery without previous knowledge of family history of hereditary spherocytosis. Most of the cases were discovered either because the bilirubin exceeded the limits of physiological jaundice or the patient was found to be anemic. It is of interest that two of the seven pa-

tients were found to have hereditary spherocytosis complicating ABO erythroblastosis in the neonatal period. Diagnosis of congenital spherocytosis in addition to ABO erythroblastosis became evident from the prolongation of the presence of anemia and spherocytosis in these infants beyond limits usually associated with natural history of erythroblastosis alone. All seven cases had an exaggerated degree of jaundice, either in its time of appearance or in the level to which the bilirubin rose during the first week of life. Six of the seven patients were anemic in the first week of life, and five of the patients showed jaundice within the first day of life.

# Virus Induced Cataracts\*

Ruth Jarman, Calvin Hanna, Carl E. Duffy,  
James G. Keatts and Oddist D. Murphree\*\*

Departments of Microbiology and Pharmacology,  
University of Arkansas Medical Center,  
Little Rock

Only a few viruses are known to produce lens cataracts in experimental animals or man. These include the Enders strain of mumps and the suckling mouse cataract agent viruses in animals and the rubella virus in human embryos. The Enders strain of mumps virus when injected over the blastoderm of the chick embryo prior to separation of the lens vesicle from the surface ectoderm resulted in a white cataract. When the suckling mouse cataract agent virus was injected intracerebrally into newborn mice, a white cataract developed. The secondary lens fibers are just beginning to form in the newborn mouse. In the human embryo, the period of susceptibility for the formation of lens cataracts by rubella virus infection in the mother corresponds to the time from just before the lens vesicle separates from the surface ectoderm to just before the secondary lens fibers begin to form.<sup>1</sup>

In the study reported here, subviral particles of St. Louis encephalitis virus were injected intracerebrally into 4-day old rats who subsequently developed white cataracts.

## Methods

St. Louis encephalitis infected mouse brains were ground and extracted with buffered cold phenol (pH 8.7 - 8.9) to obtain solutions of viral RNA free of protein (StLE-S). The phenol was removed by extraction with anhydrous ether and the ether traces were removed by bubbling nitrogen through the solutions of StLE-S. The LD<sub>50</sub> titers of the resulting solutions were between 10<sup>-3.5</sup> and 10<sup>-4.1</sup> when injected intracerebrally into young mice. Pretreatment of the StLE-S with RNase (StLE-S RNase) prior to intracerebral inoculation into animals produced no infection in mice or rats. Lens cataracts were produced in 4-day old littermate rats by intracerebral inoculation with 0.03 ml of the StLE-S solution. Part of each litter of rats were injected with 0.03 ml of

the StLE-S RNase solution and these animals served as controls.

## Results

The StLE-S treated rats became hyperexcitable, had head tremors and gave an exaggerated response when touched. The rats showed no evidence of hearing loss. The surviving rats had ruffled, usually bloody, coats and many had bloody noses. The StLE-S RNase rats exhibited no symptoms of viral infection.

There was a progressive increase in the number of lens cataracts starting soon after the eyes opened and continuing through 22 months (Table 1). Of the 37 male and 39 female StLE-S infected rats that survived, a total of 29 (39%) developed bilateral cataracts, 36 (47%) had unilateral cataracts, while the lenses of only 11 (14%) were clear at 22 months of age. None of the 75 StLE-S RNase rats had developed cataracts at 22 months of age. The eye cornea and lens diameters were measured in the infected rats at 22 months. Microphthalmos, microcornea and microlens were present in all of these animals. The earlier a cataract developed, the greater the degree of these changes.

Months*	TABLE I Cumulative number of cataracts in StLE-S treated rats.	
	Unilateral	Bilateral
4	12	13
9	22	18
14	28	47
16	35	56

\*A total of 72% of the 152 eyes developed cataracts at 22 months and none of the StLE-S RNase treated rats developed cataracts at this time.

The first sign of lens cataract development was the appearance of posterior subcapsular white very fine granular opacities occurring near one of the suture lines. The opacities progressed and involved the subcapsular cortex region and then extended to the equatorial region. After about 6 weeks, the lens became an opaque dense white body. At no time were abnormalities noted in the retinas of the eyes.

In another group of rats injected at 4 days of age with StLE-S, the eyes were removed at varying times after inoculation. The mouse LD<sub>50</sub> titer of

\*Paper presented at the University of Arkansas Medical Center in October at the meeting of the Southwest Section of the Society for Experimental Biology and Medicine.

\*\*Research supported in part from grant-in-aids NB-4024 and NB-5076 from the National Institute of Neurological Diseases and Blindness, USPHS, Bethesda, Md.

the virus was  $10^{-3.0}$  in eyes removed 3-4 days after injection and  $10^{-5.4}$  in eyes removed 5-7 days after injection.

#### Comments

The Enders strain of mumps virus produces a white cataract in the chick embryo; however, the chick embryo soon dies. The suckling mouse cataract agent virus produces an inflammatory response prior to early cataract development. StLE-S produces a cataract that may develop at any time in life without a concomitant inflammatory response in the eye.

The period for cataract formation in the StLE-S rats appears to be around 4 days of age. During this embryonic time of lens development the

secondary lens fibers are rapidly forming. The critical time in the rubella infected human embryo appears to be much earlier.<sup>1</sup> As in the StLE-S infected rats, the human embryo infected with rubella may develop marked microphthalmus, microcornea and microlens. It is possible that St. Louis encephalitis or other viruses may be a causative factor in lens cataract formation in humans and this should be considered.

#### BIBLIOGRAPHY

1. Zimmerman, L. E. Editorial: Pathogenesis of Rubella Cataract, *Arch. Ophthalm.*, 73:761-763, 1965.

#### REFERENCES

1. Neville, W. E. and Clowes, G. H.: Reconstruction of the esophagus with segments of the colon. *J. Thoracic Surgery* 35:2, 1958.



#### Effect of Hypochlorite Bleaching on Diaper Bacteria and Irritation

H. S. Whitehouse (Procter and Gamble Co, Inc., Technical Center, Cincinnati), E. A. Banan, and N. W. Ryan *Amer J Dis Child* 113:225-228 (Feb) 1967

The effect of using bleach in laundering diapers on the residual bacterial level of clean diapers and on the degree of diaper irritation was investigated. One hundred sixteen families with infants under ten months old were issued instructions to use a bleach product each time they laundered the diapers for an eight-week period. A liquid hypochlorite bleach was used by 63 of the families during weeks one through four and a bleach placebo (colored water) during weeks five through eight. The remaining 53 families used the products in the reverse order. The results indicate: home-laundered diapers are frequently contaminated with bacteria after typical home laundering; home-laundered diapers are effectively sanitized by the use of a hypochlorite bleach; hypochlorite-bleached diapers have no more adverse effect on babies' skin than non-bleached diapers. The data suggest that babies wearing hypochlorite-bleached diapers have less irritation than those wearing non-bleached diapers.

#### Neonatal Serum Bilirubin and Glucose-6-Phosphate Dehydrogenase: Relationship of Various Perinatal Factors to Hyperbilirubinemia

J. A. Wolff (630 W 168th St, New York), B. H. Grossman, and K. Paya *Amer J Dis Child* 113:251-254 (Feb) 1967

No correlation was found between any one of a number of perinatal factors evaluated and the presence of unexplained jaundice in newborn infants. Eighteen of 844 newborn infants were found to have erythrocyte glucose-6-phosphate dehydrogenase (G-6-PD) deficiency. All but two of the G-6-PD deficient subjects were of Negro origin; enzyme deficiency was not encountered in 210 white babies. Daily bilirubin values were determined for an additional group of 119 Negro full-term male neonates, in all of whom G-6-Pd activity was also determined. In this series, incidence of jaundice was the same in enzyme-deficient infants as in those with normal levels of erythrocyte G-6-PD. Daily mean bilirubin levels for the first five days of life, mean maximum neonatal values of bilirubin, and the time of occurrence of the mean maximum level of bilirubin were determined for 119 Negro full-term male infants.

# Replacement of the Esophagus By Right Colon

Carlos H. Rivarola, M.D. and H. Scott McMahan, M.D.\*

The replacement of the esophagus by different organs has been a subject that has intrigued the surgeon for years. Primarily the function of the esophagus is to transport the ingested food and saliva from the pharynx into the stomach. The main difficulty that surgeons encounter is the chemical action of the gastric contents on this replacement. One of the first materials used to reconstruct the esophagus was the skin. Soon it was learned that this was inadequate. Technically it was possible to make a tube of autogenous skin and in different stages anastomose it above and below. The complications were multiple; ulcerations, strictures and fistulas were the most common. Surprisingly enough, the esophagojejunostomy was first attempted by Herzen in 1907 for a partial replacement of the esophagus. It was not until 1944 that Judin popularized this method of reconstruction of the gastrointestinal tract. Merendino in 1955 widened the application of the jejunum as an esophageal replacement. There are certain limitations to this method and the most significant are: (1) limited length because of the anatomy of the mesentery of the small bowel; (2) due to the strong peristaltic motion of the jejunum, this organ has to be used in isoperistaltic fashion to avoid obstruction.

Because of the proximity of the stomach it attracted the attention of the surgeons for use in reconstruction through an esophagogastrectomy. Adams, Churchill, Sweet, and others deserve the credit for this technique. There are certain disadvantages in the use of the gastric reservoir. When the esophagogastric junction has disappeared the occurrence of reflux esophagitis is a serious complication. In cases of carcinoma of the lower esophagus we still use the stomach to reestablish the alimentary tract, but always a drainage procedure such as pyloroplasty or gastrojejunostomy is done.

The Europeans headed by Gavrilii used part of the stomach for construction of the system. They built a tube from the greater curvature and in this way some angulation of the esophagogastric area remains, preventing regurgitation.

In recent years it seems that the use of the large bowel has become more accepted. The colon has

a number of advantages over the jejunum and stomach: (1) adequate length; (2) good blood supply; (3) it is easy to dissect; (4) reacts well to acid peptic digestion; (5) works well in use on isoperistaltic and antiperistaltic interposition.

There are differences of opinion in regard to the use of right or left colon. There are some who still prefer the transverse colon. The large bowel can be interposed in the subcutaneous bed or antesternal region, in the retrosternal or deep in the posterior mediastinum.

There are some points in favor of the left colon. The more acceptable are: (1) more length; (2) more appropriate diameter.

We prefer to use the right colon. There is almost a constant vascular pattern in the right side. The distance from the origin of the middle

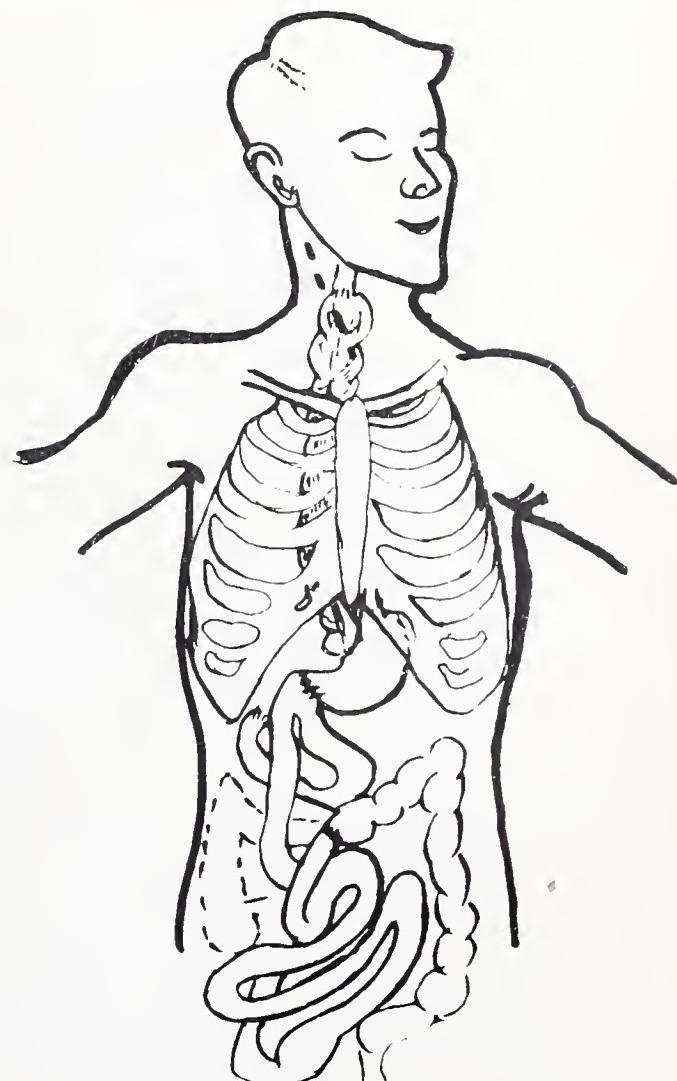


FIGURE NO. 1

\*From the Departments of Surgery, Veterans Administration Hospital, and University of Arkansas Medical Center, Little Rock, Arkansas.

Diagram of the surgical procedures performed — Hemigastrectomy with Gastrojejunostomy as well as right Colon Interposition.

colic artery to the ileocecal valve is almost identical to the distance of the middle colic artery to the suprasternal notch. This makes it easy to perform the anastomosis in the neck without any tension. We always include about two inches of the terminal ileum in case extra length is required.

The proximal part of the colon is rotated to the neck and the distal part lays easily in the anterior wall of the stomach. We perform one anastomosis in the neck and the other in the upper abdomen. The chest cavity is not opened. The bowel is placed in a retrosternal tunnel.

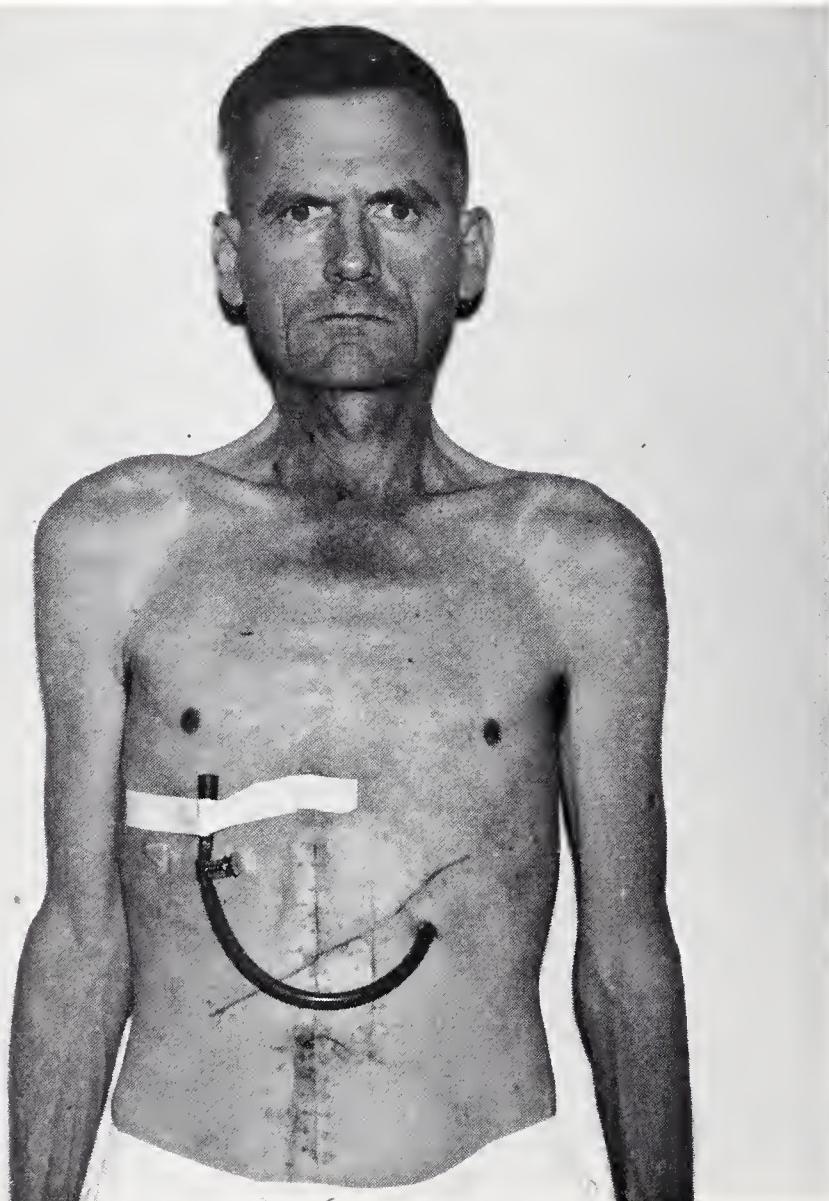
We have performed this procedure as palliative therapy in inoperable carcinomas of the esophagus, and also as a first stage in resectable cases. The best results are in benign status of the esophagus.

The purpose of this paper is to present the experience of one case with ingestion of Drano that not only developed complete scarring of the esophagus, but also burning in his distal stomach

which required: (1) hemigastrectomy; (2) gastrostomy; (3) esophageal replacement by right colon. This patient has been followed for over one year.

#### CASE PRESENTATION

This 43 year old male drank Drano on a suicidal impulse. He was hospitalized for four days following injury for gastrointestinal bleeding. He was referred to the Veterans Administration Hospital on 11/2/65 for further treatment two weeks after initial injury because of ten days increasing difficulty in swallowing. He was treated with steroids and antibiotics although it was realized it was late in the course of the disease for best results. He had progression of his disease and at esophagoscopy was found to have partial obstruction of the esophagus. Repeated gastrointestinal series were inadequate because of marked esophageal obstruction. Esophageal dilatation was attempted, but by 11/30/65 he was obstructed again so a gastrostomy was performed for feeding and



**FIGURE NO. 2**  
This picture was obtained of the patient on 2/25/66. This is a month after the last surgical procedure.

to be able to prepare his colon. Following the gastrostomy he continued with symptoms of pyloric obstruction. This became worse and on 12/21/65 at laparotomy was found to have markedly scarred antrum and pylorus from the caustic ingestion. A hemigastrectomy with a Billroth II, retrocolic gastrojejunostomy was performed for pyloric obstruction. He did fairly well with gastrostomy and hemigastrectomy. He was given leave and returned as directed. On 2/14/66 he had a right colon interposition of esophagus with anastomosis in the cervical esophagus and stomach. The colon was placed in a retrosternal position. By the tenth postoperative day he was tolerating a regular diet. He recovered with an uneventful postoperative course. Weight gain was progressive after surgery—20 pounds by six weeks, 34 pounds by ten weeks, and by six months he had gained 52 pounds and was asymptomatic. On his last visit on 9/19/66 he was tolerating his

surgery well and eating a regular diet without difficulty.

#### DISCUSSION

There are certain points which have proved of value in the technical performance of this procedure which will be mentioned briefly. The operation is performed with the patient in a supine position, with the neck and the abdomen suitably prepared and exposed. The bowel is prepared preoperatively by appropriate diet, mechanical cleansing and sulfa plus neomycin. We always have a preoperative barium enema. During the abdominal exploration the blood supply of the colon is evaluated. The ascending colon is mobilized and its mesentery examined by transillumination. A smallatraumatic occluding vascular clamp is placed in the right colic artery as well as in the ileocolic artery for about twenty minutes. These vessels will be divided and the blood supply for the ascending colon will come from



FIGURE NO. 3  
This is a picture of the patient 8/4/66  
seven months postoperatively.

the right branch of the middle colic artery. When adequate blood supply in this segment is noted, the ileum is divided about two inches from the ileocolic valve and the transverse colon in the area of the bifurcation of the middle colic artery. Once the desired segment has been isolated, it is brought up into the retrosternal tunnel from behind the stomach through an opening in the gastrohepatic omentum. Placing the colon in the neck through the substernal tunnel is facilitated by a heavy suture in the upper end of the segment. It is of utmost importance to bring this bowel segment up with great gentleness, using a combination of feeding from below and gentle traction from above. If an adequate tunnel has been created, this should not be difficult. During this maneuver it is imperative to avoid vascular tension or rotation. After the necessary abdominal anastomosis (see Figure No. 1) a drainage

procedure such as a pyloroplasty or gastrojejunostomy is necessary. In this patient this was avoided because of the previous subtotal gastrectomy. A tube gastrostomy was present in this patient prior to this procedure and was left in place. In the neck the cervical esophagus is anastomosed to the colon, in two layers of interrupted 4-0 silk. The terminal ileum can be used if it is necessary, but it is more prone to stricture. The wound in the neck should be drained. A chest x-ray must be taken in the operating room immediately upon completion of the operative procedure and before the endotracheal tube is removed. If a pneumothorax has been produced on either side, while dissecting out the substernal tunnel, it must be corrected before the patient leaves the operating room.

## REFERENCE

1. Neville, W. E. and Clowes, G. H.: Reconstruction of the esophagus with segments of the colon. *J. Thoracic Surgery* 35:2, 1958.

**Hyperuricemia and Mental Retardation**

W. M. Michener (2020 E 93rd St, Cleveland)  
*Amer J Dis Child* 113:195-206 (Feb) 1967

Hyperuricemia, associated with mental retardation, bilateral dystonic-like movements, and self-mutilation, namely lip-biting and finger-biting, is a newly recognized syndrome. A report is given of six boys who presented with hyperuricemia. The occurrence in boys only, the absence of an abnormality in the prenatal and birth periods, and the progressive severity of the course were common features of all of the cases. The serum

uric acid value was increased in all cases; cerebrospinal uric acid value was increased in two of the three cases measured. A course of medication with the uricosuric drug, probenecid, easily reduced the serum uric acid value to normal range. Some evidence exists indicating that reduction of the serum uric acid value is associated with less irritability and a decrease in involuntary movements, but these observations need further confirmation. Early institution of therapy may well modify the course of the syndrome and effort should be made to establish diagnosis promptly and to start the treatment as soon as possible.

# WHAT AMS DOES FOR YOU (Where Your Dues Go)

Joseph A. Norton M.D.\*

Address given at the Winter Meeting of the Arkansas Medical Society, December 11, 1966.

The Arkansas Medical Society has been in existence since 1875. You and I are newcomers to this organization. It is well for us to review briefly some of the remarkable accomplishments of the Society.

Generally, the AMS has given leadership in every major health gain in our State—

Some specifics—only a few—

1878—State Health Department organized

1879—Medical School started

1887—The State Hospital organized

1903—State Medical Board set up

1909—TB Sanitarium developed

1937—Uniform Narcotics Act

and later—

State Cancer Commission—Student Loan Fund—State Medical Practices Act, a model—

Like individuals, this organization has had to grow—to meet the needs of the times—and this has meant revision, re-evaluation, reassessments—and expansion, in size, in staff, in program.

So that today, you and I, the AMS, 1966, building on the heritage and work of our predecessors, find ourselves active in many fields, on many levels.

AMS is a big business today—we have a staff of five, we have two legal consultants, we own a sizable office of equipment—and our approved 1966 budget was—

Income \$133,377 — our estimated expenses \$122,705.

66% of this income is from dues.

82% of this income is from dues and Journal income.

— The income from the annual session and from our involvement in Medicare just about, in each case, pays for our expenses in these areas.

The major expense item is in salaries, and in retirement, associated with salaries—\$45,000. Then, after Medicare expense (balanced by Medicare income), comes travel and convention expense, \$10,000 of the \$122,705—and this large item goes to you—officers, representatives, committee chairmen—as you are sent, at AMS basic expense, to represent AMS in regional and na-

tional meetings, to be informed and enthused as you prepare yourself in workshops for the particular AMS work which has been assigned you, and which you have accepted. We all benefit when you do take the time and give the extra effort, as you bring back to your job, and to us, your special information, the benefits, the enthusiasm, the know-how, the contacts, the knowledge of how others are doing, or plan to do, the particular job.

Let me suggest that the AMS—big business—is not big by calculation, by long range plan—almost. I wish that were so.

No—usually expansion is forced upon us—by the pressures of our time—two major factors—

(1) by the continued expansion of activities of AMS—I wish we had planned for this—but usually, and by far the greatest pressure in these later years, it is the force of governmental activity, federal and state, that has made us re-study our basic philosophy, our practice, our training, our economics, our relation to others in our community.

(2) and next, inflation—this has been a real pressure, as the decreased value of the dollar has shown up in every expense, either for salary, for program, or for material possession.

Well, what are some of the present activities of AMS—how do you involve yourself today—

Let us consider these present activities three ways—

— Those activities that are primarily (1) from the staff of AMS, (2) from the legal consultant of AMS, and (3) from you—as you are working on committees, as representatives of AMS, as officers or councilors, etc.—

I. The office and staff of AMS—live-headed by Paul Schaefer, is located in Fort Smith—

— They provide you with professional know-how and competence, with necessary contacts with other organizations in and out of medicine, and furnish us with the necessary clinical and office work to carry on the function of this Society.

— They have daily care of our assets—our funds, and invest any surplus in interest-producing bonds.

— They manage with Doctor Kahn, the Journal

\*President, AMS, Donaghey Bldg., Little Rock, Arkansas 72201.

of AMS—solicit the advertising (a major source of income), handle the details of publication and printing.

- They do a major portion of the planning and the carrying out of all AMS meetings, large and small, as this one today—on direction of your elected officers and committee chairmen.
- They process all military dependent Medicare, a necessary program, like it or not, and see that you get paid for the work you do.
- They distribute a tremendous quantity of literature, brochures, propaganda, etc. to you, to the public, to allied and friendly lay and paramedical organizations on matters of medical importance—professional and socioeconomic—in the first half of 1965, over one-quarter million pieces of such material were distributed!
- They operate our Physician Placement Service—an aid to communities needing doctors—and to doctors needing a site to practice.
- They maintain a constant liaison for us with numerous paramedical and lay organizations sympathetic to us and our practice—as the Farm Bureau, Chamber of Commerce, hospital and nurse groups, etc.
- These are a few activities presently given by our staff and our office.

H. Present activities of our legal consultants—two—Eugene Warren—and, in past, Lawrence Blackwell, to be replaced now—include:

- In the writing of our Arkansas Medical Practices Act, they have established for us a state-wide climate for the ethical practice of medicine.
- And they work at this by promptly investigating and eradicating local quackery or fraud, whether it arises from ourselves or from outside the profession.
- In this manner, they maintain a constant vigilance over the practice of chiropody, chiropractic, optometry, osteopathy and such practices.
- They aid and advise us in legislative matters, and help us to maintain legislative contact, locally and nationally.
- And finally, they are called on to advise us constantly in medicolegal matters that touch us as individuals or as an organization.

III. Finally, what do you do—as you work in AMS, as officers, councillors, committeemen and representatives—well, here the list of current activi-

ties is very lengthy—

- Consider negotiations—with various groups, representing AMS, examples—
- With the State Government—in matters of legislation, of the Health Department, of the Welfare Department, of the Selective Service, of the State Hospital, of vocational rehabilitation of the cancer commission, of the medical center, of T.B.
- With the Federal Government—in matters of VA, of PHS, of Military Medicare, of Title 18 & 19 of newer Medicare, of Heart, Cancer, Stroke Program, of OEO—to mention a few—hours of work, of talk here.
- With non-governmental “third parties” such as hospitals, nurses, assistants, technicians, medical students, and insurance groups (Blues and others).
- Through MEFA, you insure education for medical students who have financial need—\$5.00 of each paid dues go here.
- Through Professional Relations Committee, you receive and investigate complaints about doctors and their practice—complaints from lay persons or from other doctors—working here with Grievance and Censor groups as needed.
- Through an active Insurance Committee, you negotiate and offer group insurance—a good buy at a good rate—in malpractice, in business expense disability, in accident and sickness, in life insurance.
- You plan the meetings of scientific and socio-economic interest, state-wide—as today.
- You take care of Workmen’s Compensation problems related to medicine through the state-wide Arbitration Committee.
- You plan and promote ethical and satisfactory PR efforts for organized medicine through a large Speakers Bureau, and through the use of press, radio and TV, and the use of exhibits and distribution of literature.
- You support, give constructive criticism and help plan for the medical center—the medical school and hospital particularly—as you are involved in—long range and short range plans, budget, operation, medical education, postgraduate education, school involvement in governmental programs and in research.
- Through other committees, you work in areas of public health, rural health, TB, cancer,

child and maternal welfare, immunization, sports matters, school health and fitness, mental health, traffic safety, etc.—just look sometime at the committee reports that appear in your Journal prior to each annual meeting.

- Through the Auxiliary, they are our right arm, often our most effective.
- And finally, as councillors and officers, you carry on the daily, continuous, on-going work of AMS through frequent meetings and consultations. Each day seems to bring new problems, and, occasionally, to revive old problems.

Well, these are current activities of AMS—of you, of staff—the mere recital is tiring—yet, is thrilling, as it gives some indication of vitality.

Are these multiple activities necessary? Are they all vital? Should they be continued? Should there be re-evaluation, reassignment, reassessment, re-study—given new direction and new emphasis? Should we involve selves with AMA? Is this trip really necessary?

I think so—to all these questions—yes.

This is not to say only that what we are, what we do, and how we do it represents the optimum.

No—we must be alert, be intelligent, be patient and persevering, and we must not only meet problems and challenges—we must actively seek out needs—and then give leadership, not follow-ship—give response, not reaction.

The AMA, with its resources, organization, contacts, can aid in many fields.

No one of us can foresee to a detail what is ahead of us in medicine.

But each of us knows that change is inevitable—that medicine as we have known it in past years will not persist in future years in that same pattern. Change is inevitable—really it is necessary—I submit that it should be welcome!

We spend a lot of time together, in large and in small groups, just mouthing—bawling—complaining, criticizing (not always constructively)—talking about our rights, our good and sufficient practice, arguing our jurisdictional boundaries, where practice and government and insurance and lots of other “third parties” meet in matters of health.

It is, of course, necessary that we maintain a competent, ethical profession—

- that we serve education and science primarily that we might serve others—our patients
- that we do protect ourselves and our patients from those practices and trends and philosophies that we, in our special medical competence, feel are not to the best interests.

Yet—we must be more than a protective association—we must not only react but we must respond—even lead, where we have competence and position.

It is part of the American dream that, day by day, in every way—things get better and better—that success is assured—specifically, the major health needs are met.

I question that attitude, when it prevents you from using your best talent and ability. There are many health needs now—and ahead. Each new year—each new conquest—each new discovery—not only solves problems, but also creates problems and uncovers other existing problems.

New and challenging needs face us in matters of:

- the elderly—more and more
- population expansion and more children
- mental disability
- nuclear threat
- governmental and lay involvement in health
- on and on and on and on

Let us then face the challenges to medicine in our day—boldly, courageously, prospectively, confident with intelligence and imagination, without fear.

Let us not merely react, but respond—not run from or look over needs, but seek problems and needs out, wherever they may be.

This may mean we have to work not only in our own profession, but we may have to assume community responsibilities and work actively, shoulder to shoulder, with lay persons of competence, day to day, in matters of social, economic, cultural, educational, and governmental concern.

Here we can give leadership and professional competence, where needed—and, I feel, being on

the spot, showing our willingness to work, our competence, will more likely be recognized, and leadership in matters of health will more likely fall to the medical profession, where it should be.

I think your present dues are well spent in these present AMS activities.

I make no apology for asking you even for more money—yet I know that more money is only a part of the answer.

I hope AMS can continue to grow—to expand involvement throughout our State, and do even a

better job in future years. We need not only your money—we need

you—more active

you—more realistic

you—more involved

you—more mature

you—more dedicated

Let us start today.

I beg your support.



#### Cross-Allergenicity of the Penicillins and the Cephalosporins

M. H. Grieco (St. Luke's Hospital Center, New York) *Arch Intern Med* 119:141-146 (Feb) 1967

Direct intracutaneous tests for skin sensitizing antibody were performed with several penicillin and cephalosporin derivatives in a 37-year-old man studied five months after an anaphylactic reaction to a 125 mg tablet of penicillin G. Skin sensitizing antibody was detected against both 6-amino-penicillanic acid and 7-aminocephalosporanic acid as well as to five semisynthetic penicillins and two semi-synthetic cephalosporins. Three case reports in the literature described anaphylactic reactions to cephalothin in patients with penicillin allergy, while two studies in rabbits support cross-sensitivity. In view of this apparent cross-allergenicity, cephalosporin C derivatives should be used with the same caution as penicillin derivatives are in patients with a past history of penicillin allergy.

#### Separation of Alkaline Phosphatase Enzymes in Human Serum Using Gel-Filtration (Sephadex G-200) Techniques

J. Dunne, J. J. Fennelly, and K. McGeeney (Univ College, Dublin) *Cancer* 20:71-76 (Jan) 1967

With the aid of gel filtration techniques (Sephadex G-200) the alkaline phosphatase (Bessey-Lowry-Brock) distribution patterns were studied in the serum of control human subjects and in those with conditions known to affect total enzyme levels. The characteristic control serum revealed one sharp peak of enzyme activity in the 7S protein region. A similar but sharper peak was found in osteomalacia and Paget's disease. In contrast, in malignant bone conditions 10.4%, in metastatic malignant liver disease 31.36%, and in nonmalignant liver disease 12.7% of total enzyme moved with the 19S proteins. The patterns found in various conditions are reproducible, and that of metastatic malignant liver disease is particularly characteristic.



STUDIES FROM  
THE UNIVERSITY OF ARKANSAS MEDICAL CENTER  
THE DEPARTMENT OF

## OBSTETRICS AND GYNECOLOGY

WILLIS E. BROWN, M.D., Professor, and Chairman  
STACY R. STEPHENS, M.D., EDITOR

### Residual Carcinoma *in Situ* of the Cervix Following Cold Knife Conization

W. Ragon Thompson, M.D. and Mary W. Dulaney, M.D.\*

Squamous cell carcinoma *in situ* of the uterine cervix is one of the most commonly studied subjects in modern-day gynecology. Although this entity was described by a number of independent observers beginning with Williams in 1886, extensive investigation did not occur until the widespread use of exfoliative cytology in the late 1940's<sup>7</sup>. Much study has been directed toward the evaluation of conization and hysterectomy in the treatment of this lesion.

Green<sup>8</sup> in New Zealand evaluated 446 cases of carcinoma *in situ*, 267 of which were treated with local excision and 179 by hysterectomy. After extensive follow-up he concluded that local treatment was safe for this disease, provided that invasive cancer had been excluded at the onset.

Koss et al.<sup>13</sup> after studying 93 cases of carcinoma *in situ* concluded: "Carcinoma *in situ* is a lesion of the cervical epithelium and a precursor of invasive cancer. Carcinoma *in situ* is very fragile and poorly established and may be readily eradicated by a variety of minor procedures. Its natural course may be profoundly modified by even small biopsies, drugs, and possibly physiological trauma, such as delivery. Spontaneous disappearance of carcinoma *in situ* apparently does occur but it is an extraordinarily rare event. Lesions histologically less advanced, classified as borderline atypias (dysplasias), behave similarly and may develop into carcinoma *in situ* and even invasive cervix cancer. Carcinoma *in situ* and the lesser but related lesions appear to have an extraordinarily slow evolution, continuing over periods of many

years. For this reason, they should not be considered to be in the emergency category and may be treated more leisurely. The behavior of carcinoma *in situ* and related lesions of the cervix is at marked variance with that of invasive cancer".

Pathological examination of a uterus removed because of a conization diagnosis of carcinoma *in situ* may show residual tumor, residual atypia, or normal cervix. These findings prompted our evaluation of conization specimens and the subsequently removed uteri for evidence of remaining carcinoma *in situ*. We have attempted to grade these specimens in the manner of Hajdu and Adelman<sup>10</sup> to determine whether or not we could predict the presence of carcinoma *in situ* in the hysterectomy specimen.

#### MATERIAL AND METHODS

Between 1960 and 1965 fifty patients at the University of Arkansas Medical Center had the diagnosis of carcinoma *in situ* confirmed by cervical conization and subsequently underwent hysterectomy.

Patients with cervical abnormalities on previous smear or biopsy underwent cold knife conization following cervical staining with an iodine solution. Cone size was determined by the area of cervix not taking iodine stain. An attempt was made to remove the entire non-staining area where possible. The specimens were opened, pinned down on a flat surface and allowed to fix in Formalin for a period of two to twenty-four hours. They were then cut into multiple blocks at 2 to 3 mm. yielding 8 to 15 blocks per cone. The tissue was processed in the routine manner, and sections 4

\*From the Department of Obstetrics and Gynecology, University of Arkansas Medical Center.

microns thick were cut from each block and stained with hematoxylin and eosin. If there was a question of microinvasion, step sections were taken to rule out this lesion. The uteri were fixed in a similar manner. The cervix was amputated and multiple blocks were taken for examination. Those patients who showed carcinoma in situ with microinvasion were excluded from the study; as were cases of carcinoma in situ which were handled other than with cold knife conization and subsequent hysterectomy. Certain specimens were excluded because the epithelial surface had been partially denuded at the time of conization; or the cone was too small to permit satisfactory evaluation.

Conization specimens were evaluated for degree of cellular differentiation and for linear, circumferential, and glandular extension. Hysterectomy specimens were evaluated for residual carcinoma in situ and cervical atypia.

The degree of cellular differentiation or dedifferentiation was graded according to the method described by Broders<sup>3</sup>, and given a classification of I-IV with Grade I representing the most mature cells and Grade IV representing the most anaplastic lesion.

Linear extension was determined according to the method of Allen<sup>1</sup> by grading the radial sections under low magnification from "A" to "C". "A" refers to a lesion involving one-third of the length of the ectocervical squamous epithelium of an average cone or about 5 mm. "B" refers to a section which shows two-thirds of the length of the specimen to be involved; and "C" refers to those sections showing carcinoma in situ to their edges.

The degree of circumferential involvement was graded by the number of sections of cone specimen showing carcinoma in situ. This was done by counting the number of sections involved and calculating a percentage of the total number of sections. Only the original sections were used in calculating this percentage, step sections being excluded.

Glandular involvement was graded GO—no glandular involvement, GS—superficial glandular involvement, and GD—deep glandular involvement. Superficial glandular involvement was defined as those glands no more than one highpower field ( $\times 40$ ) from the basal cell lining of the surface epithelium. Deep glandular extension referred to glandular involvement beyond this distance.

Thus, histological grading revealed four meaningful classifications (Table I).

TABLE I  
CLASSIFICATIONS FOR THE EVALUATION OF  
CERVICAL CONIZATION SPECIMENS

**CELLULAR DIFFERENTIATION**

- Grade I—25% or less of cells poorly differentiated
- Grade II—26%-50% of cells poorly differentiated
- Grade III—51%-75% of cells poorly differentiated
- Grade IV—76%-100% of cells poorly differentiated

**LINEAR EXTENSION**

- Grade A— $\frac{1}{3}$  of the length of ectocervix involved
- Grade B— $\frac{2}{3}$  of the length of ectocervix involved
- Grade C—All of the length of ectocervix involved

**CIRCUMFERENTIAL EXTENSION**

- Grade 1—25% or less of sections involved
- Grade 2—26%-50% of sections involved
- Grade 3—51%-75% of sections involved
- Grade 4—76%-100% of sections involved

**GLANDULAR EXTENSION**

- GO—No glandular involvement
- GS—Superficial glandular involvement
- GD—Deep glandular involvement

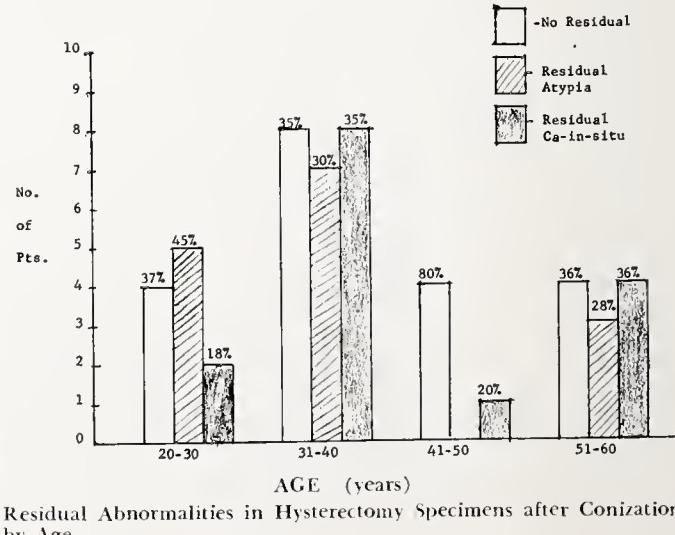
For example, a cone in which the malignant cells were well differentiated, extended no more than 5 mm. from the squamocolumnar junction, involved only 20 per cent of the sections, and in which there was no glandular involvement would be graded 1-A-1-GO; whereas a cone specimen showing poor cellular differentiation extending to the edge of the cone, involving 80 per cent of the sections, and showing deep glandular involvement would be graded IV-C-4-GD.

**RESULTS**

Of the fifty uteri evaluated, twenty (40 per cent) showed no residual carcinoma, fifteen (30 per cent) showed residual atypia, and fifteen (30 per cent) showed residual carcinoma in situ.

Figure I shows residual carcinoma by age in hysterectomy specimens after conization. As expected there was less carcinoma in situ in the 20-

FIGURE I



30 year age group. After 30 years residual was about equally divided among the three diagnoses. The low residual in the 41-50 year age group might be due to the small number of patients or the increased incidence of invasive carcinoma during these years.

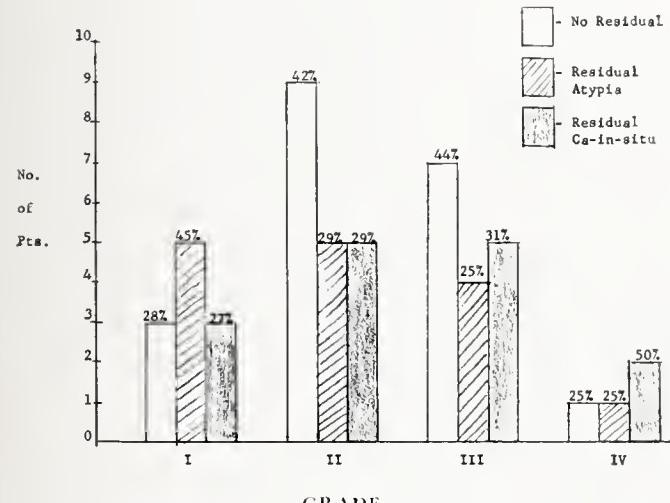
Cellular differentiation of conization specimens is shown in Table II. Only four of our fifty cases showed marked de-differentiation. All had deep glandular involvement, and were in the "B" group

TABLE II DEGREE OF CELLULAR DIFFERENTIATION		
GRADE	NUMBER OF CASES	PER CENT
I	11	22
II	19	38
III	16	32
IV	4	8
TOTAL	50	100

for linear extension. Two showed 76 to 100 per cent involvement of sections counted.

Residual abnormalities for the four grades of cellular differentiation are presented in Figure 2. No difference between grade is noted.

FIGURE 2



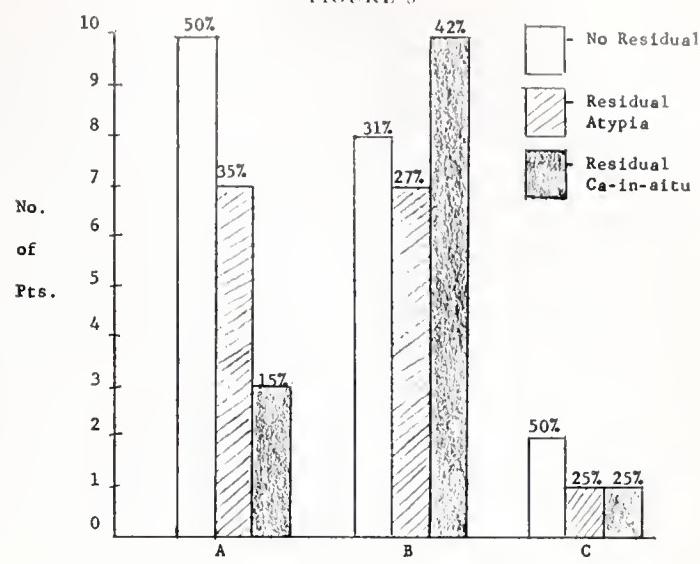
Residual Abnormalities in Hysterectomy Specimens according to Cellular Differentiation.

Evaluation by linear extension is presented in Figure 3. Grade "A" included twenty patients, Grade "B" twenty-six patients, and Grade "C" four patients. Of the latter, three had deep glandular involvement.

Evaluation by circumferential extension showed twelve patients in Grade 1, seventeen patients in Grade 2, fifteen patients in Grade 3, and six patients in Grade 4. Figure 4 shows residual abnormalities in the hysterectomy specimen.

Evaluation for glandular involvement showed none in nine patients, superficial involvement in twenty-two patients, and deep involvement in

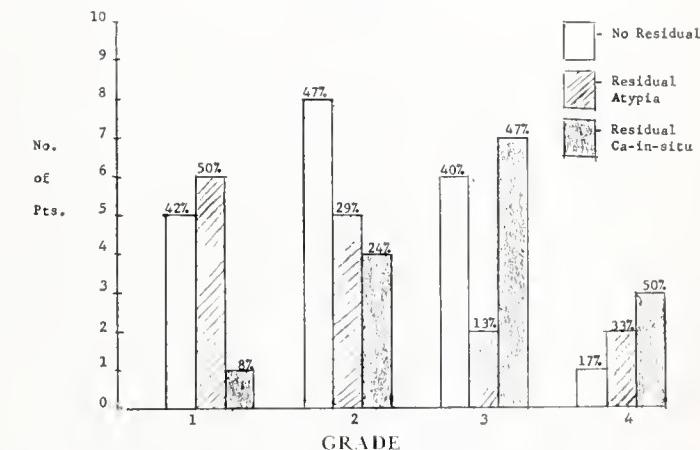
FIGURE 3



Residual Abnormalities in Hysterectomy Specimens according to Linear Extension.

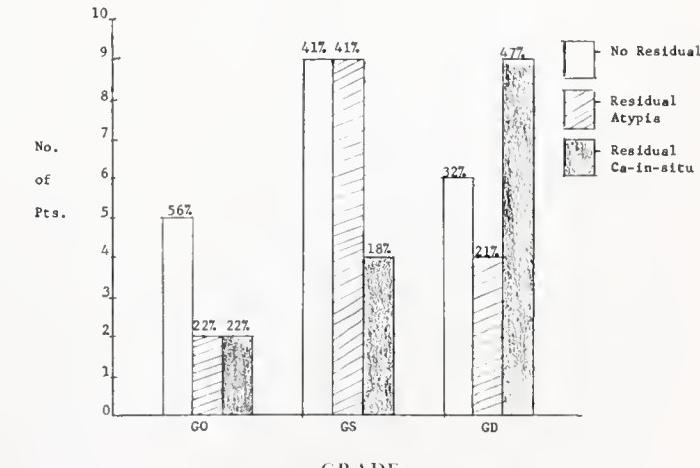
nineteen patients. Figure 5 presents residual abnormalities in the hysterectomy specimen. Deep glandular involvement in the conization specimen did correlate with residual carcinoma in situ.

FIGURE 4



Residual Abnormalities in Hysterectomy Specimens according to Circumferential Extension.

FIGURE 5



Residual Abnormalities in Hysterectomy Specimens according to Glandular Extension.

## DISCUSSION

There have been many publications indicating the amount of residual carcinoma in situ in hysterectomy specimens following cervical conization. (Table III.) Giglio et al.<sup>6</sup> found that 19 per cent of ninety-eight patients had residual carcinoma in situ, 13 per cent had dysplasia, and 6 per cent had dysplasia bordering on carcinoma in situ. From this, they concluded that cold knife conization alone was inadequate treatment for carcinoma in situ in a substantial percentage of cases. Hajdu and Adelman<sup>10</sup> evaluated one hundred cervical conization biopsies and the subsequently removed uteri. Seventeen patients showed residual tumor. All occurred in older patients with anaplastic and extensive lesions on the cone specimen. Pederson and Jefferies<sup>15</sup> in a series of 121 patients found 42.1 per cent to have residual carcinoma in situ on hysterectomy. Two patients had invasive carcinoma in the removed uterus but only carcinoma in situ on conization specimen. Schiffer et al.<sup>19</sup> found residual carcinoma in situ in 28 of 76 patients. They felt that by grading the degree of linear extension, extended cone biopsy could be used as the definitive treatment for carcinoma in situ in selected patients but that close cytological follow-up was an intrinsic part of the procedure.

Wielenga et al.<sup>23</sup> classified carcinoma in situ into alpha, beta, beta/gamma, and gamma patterns according to the increasing degrees of malignant potential or primary cell type. The incidence of residual carcinoma in situ in post-conization hysterectomies with mature cell pattern was low. The residual in those with the alpha pattern was nil, in beta 25 per cent, but in immature patterns of beta/gamma and gamma, the incidence of residual was 50 per cent. The over-all residual was 31.1 per cent. Scott and Reagan<sup>21</sup> reported 32.6 per cent residual carcinoma in situ with an additional 34.8 per cent of residual dysplasia or atypical hyperplasia.

Baker and Hawks<sup>2</sup> analyzed 136 patients with carcinoma in situ 132 of whom had had a conization followed by hysterectomy. They found residual carcinoma in 36 patients (27.3 per cent), two of whom had invasion on hysterectomy not found on cone. They felt that the presence of glandular involvement on cone did not increase materially the incidence for residual tumor in the postoperative specimens. They believed the residual tumor to be due to incomplete removal of the tumor by

conization biopsy, to its multicentric origin; or to a combination of both. Harris and Peterson<sup>11</sup> studied 129 conization cases with carcinoma in situ and found that 29.5 per cent had residual disease. They noted that those with only focal carcinoma in situ had a residual rate of 13.3 per cent; but those with extensive carcinoma in situ and/or glandular metaplasia had a residual rate of 48.7 per cent. Ferguson and Demick<sup>4</sup> studied 235 diagnostic conization, 118 of which had hysterectomy after cone. Of these, eight patients showed a more serious lesion on hysterectomy than was seen on conization. Twenty-eight showed the same lesion as seen on conization and 82 revealed a less serious lesion on hysterectomy than seen on cone.

The 30 per cent residual rate found in the present study is comparable to that of other individual studies and to a collection of patients from the literature (Table III).

TABLE III  
RESIDUAL CARCINOMA IN SITU IN  
HYSTERECTOMY SPECIMENS FOLLOWING  
CERVICAL CONIZATION

AUTHOR	NUMBER OF PATIENTS	PER CENT
Giglio <sup>6</sup>	19/ 98	18.6
Hajdu <sup>10</sup>	17/100	17.0
Pederson <sup>15</sup>	51/121	42.1
Schiffer <sup>19</sup>	28/ 76	35.6
Wielenga <sup>23</sup>	23/ 90	31.1
Scott <sup>21</sup>		32.6
Schulman <sup>20</sup>	49/163	30.0
Peightal <sup>16</sup>	4/ 25	16.0
Baker and Hawks <sup>2</sup>	36/132	27.3
Harris <sup>11</sup>	38/129	29.5
Silbar <sup>22</sup>	27/124	21.7
Present Study	15/ 50	30.0
TOTAL	307/1108	27.7

It was disappointing that the residual rate did not correlate more closely with the degree of malignant involvement found on the cone specimen. Deep glandular involvement proved to be the most reliable single criterion of the four, yet 32 per cent of those with deep glandular involvement showed no residual lesion at hysterectomy, and 22 per cent of those with no glandular involvement did show residual carcinoma. Cellular differentiation revealed an increased residual rate with the more immature forms yet 27 per cent of those considered well differentiated had residual carcinoma in situ. Increased circumferential involvement also showed an increase in residual, but 8 per cent of those with less than 25 per cent of the sections involved had residual carcinoma in situ. Surprisingly, the degree of

linear extension correlated most poorly with the residual rate, the largest residual being found in the "B" group in which the lesion did not extend to the edge of the section.

We feel that these criteria might have limited use in the evaluation of a patient who is young and desires more children; or in a patient who is a poor surgical risk for hysterectomy and can be followed closely with cytology. The small lesion without deep glandular involvement is more likely to be completely eradicated by conization, as expected. The most important lesson to be learned from this type of study is the unreliability of any criteria in predicting residual carcinoma with certainty. Even the smallest area of well differentiated carcinoma in situ that is apparently widely excised may reappear in the excised uterus. Hysterectomy, with excision of a wide vaginal cuff, still appears to be the treatment of choice for this lesion.

### SUMMARY

Conization and hysterectomy specimens of fifty patients with a diagnosis of carcinoma in situ on conization who subsequently underwent hysterectomy were reviewed. The conization sections were graded according to cellular differentiation, linear extension, circumferential extension, and glandular involvement in an attempt to determine whether or not residual carcinoma might be expected at the time of hysterectomy. The over-all residual rate was found to be 30 per cent carcinoma in situ, with an additional 30 per cent showing residual atypia. The above criteria correlated poorly with the residual carcinoma found on hysterectomy.

### BIBLIOGRAPHY

- Allen, A. C.: Grading of Carcinoma in Situ of the Cervix. *Cancer* 17:979-982, 1964.
- Baker, W. S., Jr. & Hawks, B. L.: Prognostic Significance of Glandular Involvement in Cold Knife Conization Biopsies in Carcinoma in Situ of the Uterine Cervix. *Amer. J. Obstet. & Gynec.*, 73:1266-1276, 1957.
- Broders, A. C.: Carcinoma, Grading and Practical Application. *Arch. Path. Lab. Med.* 2:376-381, 1926.
- Ferguson, J. H. & Demick, P. E.: Diagnostic Conization of the Cervix: An Analysis 235 Operations. *New England J. Med.* 262:13, 1960.
- Foot, F. W., Jr. & Stewart, F. W.: The Anatomical Distribution of Intraepithelial Epidermoid Carcinomas of the Cervix. *Cancer* 1:431-440, 1948.
- Giglio, F. A., Dowling, E. A., & Jones, W. N.: Carcinoma in Situ of the Cervix, An Analysis of Treatment by Hysterectomy. *Am. J. Obstet. & Gynec.* 93:193-8, 1965.
- Graham, J. B., Sotto, L. S. J., & Palonek, F. P.: *Carcinoma of the Cervix*. W. B. Saunders Co., 1962, Philadelphia, Pa.
- Green, G. H.: Cervical Carcinoma in Situ: True Cancer or Non-Invasive Lesion. *Aust.-New Zealand J. Obstet. Gynec.* 4:165-73, 1964.
- Green, G. H.: The Significance of Cervical Carcinoma in Situ. *Amer. J. Obstet. & Gynec.*, 94:1009-22, 1966.
- Hajdu, S. I. & Adelman, H. C.: Anatomic Distribution and Grading of Carcinoma in Situ of the Cervix. *Cancer* 19:1466-1472, 1966.
- Harris, J. H. & Peterson, P.: Cold Knife Conization & Residual Preinvasive Carcinoma of the Cervix. *Amer. J. Obstet. & Gynec.* 70:1092-1099, 1955.
- Hertig, A. T. & Gore, H.: Tumors of the Vulva, Vagina & Uterus. In *Tumors of Female Sex Organs, Part 2*, Washington, D.C. Armed Forces Institute of Pathology, 1960.
- Koss, L. G., Stewart, F. W., Foote, F. W., Jordan, M. J., Bader, G. M., & Gay, E.: Some Histological Aspects of Behavior of Epidermoid Carcinoma in Situ & Related Lesions of the Uterine Cervix—a long term Prospective Study. *Cancer* 16:1160-1211, 1963.
- Old, J. W. & Jones, D. G.: Squamous Cell Carcinoma in Situ of the Uterine Cervix. 3. A long term follow-up of twenty-three unsuspected cases of 6 to 10 years duration without interim treatment. *Cancer* 18:1622-30, 1965.
- Pederson, B. L., & Jeffries, F. W.: Cervical Carcinoma in Situ: a study of 144 patients. *Obstet. & Gynec.* 26:725-730, 1965.
- Peightal, T. C., Brandes, W. W., Crawford, D. B., Jr., & Dakin, E. S.: Conservative Treatment of Carcinoma in Situ of the Cervix—Clinical & Cytopathological Study. *Am. J. Obst. & Gynec.* 69:547-557, 1955.
- Reagan, J. W. & Hicks, D. J.: A Study of In Situ & Squamous Cell Cancer of the Uterine Cervix. *Cancer* 6:1200-1214, 1953.
- Richart, R. M.: Colposcopic Studies of the Distribution of Dysplasia & Carcinoma in Situ on the Exposed Portion of the Human Uterine Cervix. *Cancer* 18:950-4, 1965.
- Schiffer, M. A., Greene, H. J., Pomerance, W., & Moltz, A.: Cervical Conization for Diagnosis & Treatment of Carcinoma in Situ. *Am. J. Obstet. & Gynec.* 93:889-95, 1965.
- Schulman, H., & Ferguson, J. H.: Cone Biopsy of the Cervix: A review of 486 cases. *J. Obstet. & Gynec. Brit. Comm.* 69:474-480, 1962.
- Scott, R. B. & Reagan, J. W.: Diagnostic Cervical Biopsy Technique for the Study of Early Cancer—Value of the Cold Knife Conization Procedure. *JAMA* 160:343-347, 1956.
- Silbar, E. L. & Woodruff, J. D.: Evaluation of Biopsy, Cone, and Hysterectomy Sequence in Intraepithelial Carcinoma of the Cervix. *Obstet. & Gynec.* 27:89-97, 1966.
- Weilenga, G., Old, J. W. & Von Haam, E.: Squamous Cell Carcinoma in Situ of the Uterine Cervix. II-Topography & Clinical Correlations. *Cancer* 18:1612-21, 1965.

# In managing tense, anxious patients here's one combination that makes sense: your understanding counsel and Serax® (oxazepam) Wyeth

When prescribing, carefully observe dosage recommendations and appropriate precautions, especially as pertaining to the elderly (see Wyeth literature or PDR as well as "IN BRIEF" below).

## IN BRIEF.

**Contraindications:** History of previous hypersensitivity to oxazepam. Oxazepam is not indicated in psychoses.

**Precautions:** Hypotensive reactions are rare, but use with caution where complications could ensue from a fall in blood pressure, especially in the elderly. Withdrawal symptoms upon discontinuation have been noted in some patients exhibiting drug dependence through chronic overdose. Carefully supervise dose and amounts prescribed, especially for patients prone to overdose; excessive, prolonged use in susceptible patients (alcoholics, ex-addicts, etc.) may result in dependence or habituation. Reduce dosage gradually after prolonged excessive dosage to avoid possible epileptiform seizures. Withdrawal symptoms following abrupt discontinuance are similar to those seen with barbiturates. Caution patients against driving or operating machinery until absence of drowsiness or dizziness is ascertained. Warn patients of possible reduction in alcohol tolerance. Safety for use in pregnancy has not been established.

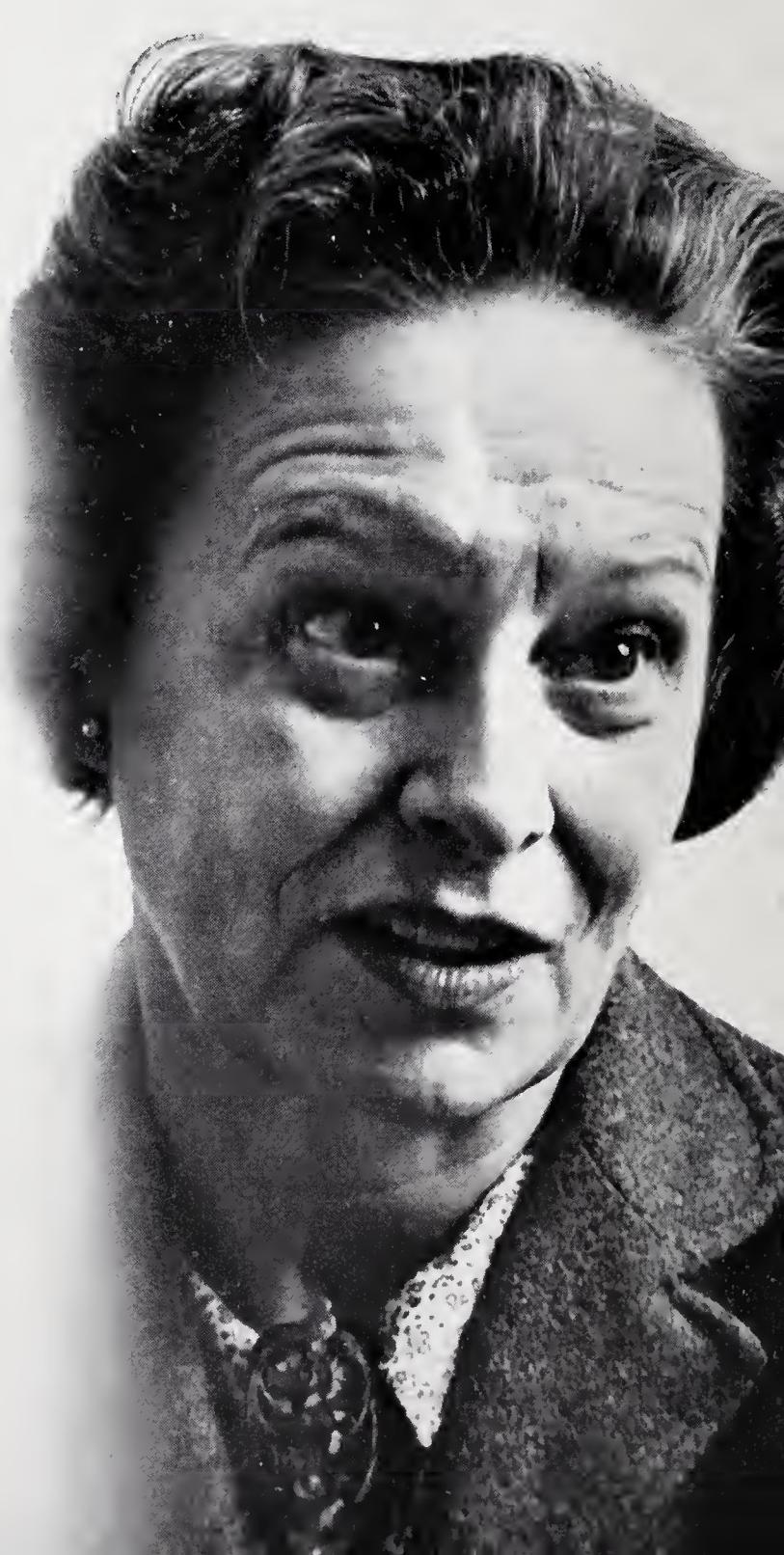
Not indicated in children under 6 years; absolute dosage for 6- to 12-year-olds not established.

**Side Effects:** Therapy-interrupting side effects are rare. Transient mild drowsiness is common initially; if persistent, reduce dosage. Dizziness, vertigo and headache have also occurred infrequently; syncope, rarely. Mild paradoxical reactions (excitement, stimulation of affect) are reported in psychiatric patients. Minor diffuse rashes (molluscum, urticarial and maculopapular) are rare. Nausea, lethargy, edema, slurred speech, tremor and altered libido are rare and generally controllable by dosage reduction. Although rare, leucopenia and hepatic dysfunction including jaundice have been reported during therapy. Periodic blood counts and liver function tests are advised. Ataxia, reported rarely, does not appear related to dose or age.

These side reactions, noted with related compounds, are not yet reported: paradoxical excitation with severe rage reactions, hallucinations, menstrual irregularities, change in EEG pattern, blood dyscrasias (including agranulocytosis), blurred vision, diplopia, incontinence, stupor, disorientation, fever and euphoria.

**Availability:** Capsules of 10, 15 and 30 mg. oxazepam.

Photograph posed by professional models.



**Mild mood depression,  
poor appetite, little  
interest in the present or  
future. Does this picture  
mean that she's giving in  
to functional fatigue?**

**When functional fa-  
tigue is part of her prob-  
lem, Alertonic can help  
counteract accompanying  
apathy and inertia. It  
helps lift mood, stimulate  
appetite, and establish  
new interest in daily life.**

Pleasant-tasting Alertonic combines pipradrol hydrochloride—a gentle cerebral stimulant—with an excellent vitamin and mineral formula, in a satisfying 15% alcohol vehicle.

Especially in the aging patient, nothing fosters confidence and a sense of well-being better than your own personal warmth, understanding, and encouragement. Between visits, however, your prescription for Alertonic can help keep your patient from giving in to functional fatigue.

*Adequate dosage is important: Prescribe Alertonic—  
one tablespoonful t.i.d., 30 minutes before meals  
...tastes best chilled.*

*And for your patient's sake, prescribe Alertonic  
in the convenient, economical one-pint bottle.*

Available only on prescription

# Alertonic®

Each 45 cc. (3 tablespoons) contains: alcohol, 15%, pipradrol hydrochloride, 2 mg.; thiamine hydrochloride (vitamin B<sub>1</sub>) (10 MDR\*), 10 mg.; riboflavin (vitamin B<sub>2</sub>) (4 MDR), 5 mg.; pyridoxine hydrochloride (vitamin B<sub>6</sub>), 1 mg.; niacinamide (5 MDR), 50 mg.; choline,<sup>†</sup> 100 mg.; inositol,<sup>†</sup> 100 mg.; calcium glycerophosphate, 100 mg. (supplies 2% MDR for calcium and for phosphorus) and 1 mg. each of the following: cobalt (as chloride), manganese (as sulfate), magnesium (as acetate), zinc (as acetate), and molybdenum (as ammonium molybdate).

\*Multiple of adult Minimum Daily Requirement supplied.

<sup>†</sup>The need for these substances in human nutrition has not been established.

**Indications:** 1. Functional fatigue such as that often associated with: a depressing experience or stressful time of life; advancing years; convalescence; limited activity or confinement. 2. Poor appetite and vitamin-mineral deficiency as they occur in: patients having faulty eating habits; geriatric patients who are losing interest in food; patients convalescing from debilitating illness or surgery.

**Contraindications:** As with other drugs with CNS stimulating action, Alertonic is contraindicated in hyperactive, agitated or severely anxious patients and in chorea or obsessive compulsive states.

**Side effects:** Reports of overstimulation have been rare. Patients who are known to be unduly sensitive to the effects of stimulant drugs should be observed carefully in the initial stages of treatment.

**Dosage:** Adults, 1 tablespoonful; children (over 15 years old), 1 to 2 teaspoons; children (4 to 15 years old), 1 teaspoonful. To be taken three times daily 30 minutes before meals.

**Merrell**

THE WM. S. MERRELL COMPANY

Division of Richardson-Merrell Inc.

Cincinnati, Ohio 45215

# TEACHING SEMINAR

University of Arkansas Medical Center  
Little Rock, Arkansas



## Bacterial Endocarditis at University of Arkansas Medical Center

David M. Johnson, M.D.\*

**B**acterial endocarditis is a disease due to bacterial infection of the valvular and mural endocardium. The causative organisms can usually be demonstrated during life by blood cultures, and post-mortem by spreads of the endocardial vegetations. Bacterial endocarditis is a frequent cardiac illness, ranking next to coronary, hypertensive and rheumatic heart disease.<sup>1</sup>

It is the purpose of this paper to present the microbiologic and clinical aspects of the disease that have been observed in 76 patients over the past twenty-one years at the University of Arkansas Medical Center.

### Incidence

Between 1945 and 1958, there were thirty-two cases of bacterial endocarditis at the UAMC. This is 42% of the overall series. From 1959 to 1966, there were 44 cases of BE, or 58% of this series. However, since moving to the Medical Center in 1956, our average daily census has increased 36%.

### Age Distribution

The average age of 76 patients with bacterial endocarditis studied at the UAMC was 31 years.

AGE	AGE DISTRIBUTION TABLE I		
	MALES	FEMALES	TOTAL
0-10	5	3	8
11-20	10	7	17
21-30	8	6	14
31-40	7	5	12
41-50	3	3	6
51-60	8	0	8
61-70	4	1	5
71-80	3	1	4
81-90	1	0	1

\*4301 West Markham, Little Rock, Arkansas 72205.

Table I gives the age distribution per decade.

The oldest patient was a man 85 years old and the youngest was a one year old female.

This distribution compares with that of Weinstein<sup>2</sup> and that of Pankey.<sup>3</sup>

In our series at UAMC, 31% were 20 years old or younger, 37% were between 20 and 40 years old, 18% were between 40 and 60 years old, and 14% were between 60 and 85 years old.

The high incidence in the first and second decade may reflect the large number of younger patients with acquired and congenital heart disease referred to the UAMC for cardiac evaluation.

### Sex Incidence

The group of patients studied at the UAMC was composed of 49 males and 27 females. In the age range of 51 to 70 years, there were 12 males and 1 female. A significant trend toward older age in cases caused by Strep. viridans has been reported.<sup>4</sup> Kerr<sup>5</sup> found in the older group a preponderance of men and called attention to bacterial endocarditis at an earlier age in females.

### UNDERLYING HEART DISEASE

	TABLE II			
	Males	Females	Total	Percent
RHEUMATIC	27	17	44	58
CONGENITAL	12	5	17	22
UNKNOWN	5	5	10	14
ATHEROSCLEROSIS OF VALVE	5	0	5	6

### Underlying Heart Disease

The incidence of various types of heart disease observed in the 76 patients studied at the UAMC is presented in Table II.

As would be expected, most of the patients had acquired valvular or congenital heart disease. However, 14% of the group had no evidence of heart disease.

### Microorganisms

The most important aid in the diagnosis of this disease is the blood culture.

Tompsett<sup>6</sup> says that 90% of cases of bacterial endocarditis are caused by either streptococci (microaerophilic, enterococcal, nonhemolytic, hemolytic) or staphylococci.

In this series at UAMC, 56% of the cases were due to strep and staph. In 27 cases (35%) no specific bacteriologic etiology was established. However, we do not know how many had prior antibiotic therapy. In our patients where the organism was identified, 84% were streptococcus or staphylococcus infections. (See Table III)

MICROORGANISMS  
TABLE III

ORGANISM	TOTAL	PERCENT
NONE	27	35
STREP. VIRIDANS	25	32
STAPH. AUREUS	13	17
DIPTHEROIDS	4	5
ENTEROCOCCI	2	3
B-HEMOLYTIC STREP.	2	3
MICROAEROPHILIC STREP.	1	1
ALKALIGENES FECALIS	1	1
HEMOPHILUS APHROPHILUS	1	1

### A. Streptococci

Strep. viridans is still responsible for about 50% of all types of bacterial endocarditis — it is still the primary agent in 70 to 80% of cases of SBE.<sup>7-11</sup>

Enterococci were responsible for only two cases in our hospital, despite the preponderance of older men. The frequency of isolation of this organism has ranged from 2.8 to 10%.<sup>10,12,13</sup> Urologic procedures and uterine manipulation in most cases appear to be the predisposing factor.

### B. Staphylococci

Staphylococci were responsible for 17% of our cases of bacterial endocarditis. Fifty percent of our cases of acute endocarditis, symptoms less than one month, were caused by staph aureus. This was similar to the study of Weinstein<sup>2</sup> where the overall incidence was 23%.

Predisposing factors found by Dowlings<sup>15</sup> were infections of skin, localized abscess, osteomyelitis, puerperal sepsis, and unsterile intravenous injections.

### C. Pneumococcus and Gonococcus

There were no cases due to these organisms. This is in accordance with other similar series. Undoubtedly this is due to the widely available antibiotic therapy for these organisms.

### D. Uncommon Bacteria

Those that were isolated here were diphteroids, alkaligenes fecalis, and hemophilus aphrophilus.

### Foci of Infection

Table IV lists the foci of infection found at the UAMC.

FOCI OF INFECTION  
TABLE IV

	TOTAL
DENTAL MANIPULATIONS	11
PNEUMONIA	4
CARDIAC SURGERY	3
EMPYEMA	2
G-U INFECTION	2
TUR	1
DELIVERY	1
MENINGITIS	1
SKIN INFECTION	1

In acute bacterial endocarditis, especially due to staphylococci, a preceding infection can more often be documented. In the review by Dowlings<sup>15</sup> of staph endocarditis, there was no obvious portal of entry in half the cases. In our hospital, 36% of the patients who had SBE due to strep viridans had prior history of dental manipulation.

CLINICAL FEATURES  
TABLE V

	TOTAL	PERCENT
FEVER	74	97
MURMUR	72	95
ANEMIA	49	65
SPLENOMEGALY	24	30
HEPATOMEGLY	22	28
CHF	22	28
PETECHIAE	20	26
HEMATURIA	17	23
EMBOLI	14	18
CLUBBING	5	6

### Clinical Features

Table V gives the most significant physical and laboratory findings of our 76 patients.

### A. Fever

This is the most frequent sign of endocarditis. Virtually every patient may be shown to be febrile if carefully observed. However, there are a few factors which alter the temperature. The administration of salicylates or other antipyretic drugs; adrenal steroids, or many antimicrobial drugs, may lower the temperature.

### B. Murmur

Kerr<sup>5</sup> says that a murmur is present in 99% of

cases of bacterial endocarditis. Four of our patients had no cardiac murmurs when first seen. One was an 85 year old man who died shortly after admission. He was found to have subacute bacterial endocarditis at post-mortem. Another was a 26 year old female who was admitted for fever and seizures. She died shortly thereafter and had SBE at post-mortem.

#### C. Petechiae

Petechiae are the most common dermal manifestation of SBE. In our patients, 26% had this manifestation. In the study by Weinstein,<sup>2</sup> 29% of their patients had petechiae. The study by Pankey<sup>3</sup> showed petechiae in 70% of their patients.

#### D. Splenomegaly

The spleen was palpable in 30% of our patients. Those studied by Weinstein<sup>2</sup> and Pankey<sup>3</sup> showed splenomegaly in 44% and 52% respectively.

#### E. Clubbing

The incidence of clubbing has decreased in recent years.<sup>5</sup> Clubbing was present in only 6% of our patients. Those studied by Weinstein<sup>2</sup> and Pankey<sup>3</sup> showed clubbing present in 7% and 24% respectively.

#### F. Embolic Phenomena

This is a striking feature of SBE. Eighteen percent of our patients experienced at least one major embolic complication. Fourteen percent of these were cerebral and 4% were peripheral embolic. Cates<sup>9</sup> and Cristie<sup>9</sup> showed that emboli occurred in 35% of their patients. Emboli were observed in only 15% of cases studied by Wedgewood.<sup>11</sup> Emboli were present in 30% of those studied by Weinstein<sup>2</sup> and only 12% of those studied by Pankey.<sup>3</sup>

#### G. Hematuria

This was present in 23% of our cases—comparable to the study by Weinstein.<sup>2</sup>

#### H. Congestive Heart Failure

The incidence of congestive failure in this series was the same as in other series.<sup>2,3</sup>

#### Discussion

Bacterial antibiotics should be used in adequate dosage for an adequate period of time. High blood levels must be maintained for a relatively long period of time in order to insure adequate antibiotic diffusion into the valve substance and vegetations which are relatively avascular.

Aqueous penicillin, 10-12 million units per day, should be given for SBE due to strep viridans in-

fections. Although streptomycin is not usually required for strep viridans infections, some physicians administer 1 gm. per day. If the infection is due to enterococcus, or other organisms relatively resistant to penicillin, 20 million units penicillin per day should be given. Streptomycin must be given in addition. In staphylococcal infections resistant to penicillin, methicillin — 12 gm. per day — is the treatment of choice. Therapy should be continued for four to six weeks.

To make certain that the antibiotic therapy is effective, the serum inhibition test is used. A serum dilution of 1:4 should be bactericidal; otherwise, the antibiotic is ineffective or the dose ineffective. Of course, the organism has to be isolated from the blood in order to perform this test. At our hospital this test is done on all patients with bacterial endocarditis who have the causative organisms isolated. There appears to be a direct correlation between an adequate serum inhibition level and recovery.

#### Mortality

In this series the mortality rate was 40%. This includes those cases diagnosed only at post-mortem examination and which had not received antibiotic therapy. Of the patients who were treated the mortality rate of SBE was 25%. The mortality of acute BE treated with antibiotics was 29%.

#### Summary

Seventy-six patients with bacterial endocarditis were observed at UAMC during the 21 year period between 1945 and 1966. The disease was defined as a bacterial endocarditis associated usually with a micro-organism of low virulence and resulting in the clinical signs of chronic infection.

Our findings were similar to that of larger series at hospitals in different areas from our own.

#### Acknowledgment

I am very grateful to Drs. Robert S. Abernathy and James S. Taylor who kindly reviewed the manuscript and provided many helpful suggestions.

#### BIBLIOGRAPHY

1. Friedberg, C. K.: Diseases of the Heart. W. B. Saunders, Publisher, 1966.
2. Weinstein, L., and Lerner, P. I.: Infective Endocarditis in the Antibiotic Era. *New Eng. J. Med.* 274:199, 1966.
3. Pankey, G. A.: Subacute Bacterial Endocarditis at University of Minnesota Hospital, 1939 through 1959. *Ann. of Int. Med.* 55:550, 1961.

4. Vwaydah, M. M., Weinberg, A. N.: Bacterial Endocarditis—A Changing Pattern. *New Eng. J. Med.* 273: 1231, 1965.
5. Kerr, A., Jr.: Subacute Bacterial Endocarditis. Thomas, Springfield, Ill., Publisher, 1955.
6. Tompsett, R.: Diagnosis and Treatment of Bacterial Endocarditis. *Dis. Month.* pp. 1-32, Sept., 1961.
7. Friedberg, C. K., Goldman, H. M., & Field, L. E.: Study of Bacterial Endocarditis. *Arch. of Int. Med.* 107:6, 1961.
8. Wilson, L. M.: Etiology of Bacterial Endocarditis: Before and Since Introduction of Antibiotics. *Ann. of Int. Med.* 58:946, 1963.
9. Cates, J., and Christie, R. V.: Subacute Bacterial Endocarditis. *Quart. J. Med.* 20:93, 1951.
10. Morgan, W. L., & Bland, E. E.: Bacterial Endocarditis in the Antibiotic Era. *Circ.* 19:753, 1959.
11. Wedgewood, J.: Early Diagnosis of Bacterial Endocarditis. *Lancet* 2:1058, 1955.
12. Geraci, J. E., & Martin, W. J.: Antibiotic Therapy of Bacterial Endocarditis. *Circ.* 10:173, 1954.
13. Toh, C. C., & Bale, K. P.: Natural History of Enterococcal Endocarditis. *Brit. Med. J.* 2:640, 1960.
14. Koenig, M. G., & Kaye, D.: Enterococcal Endocarditis. *New Eng. J. Med.* 264:257, 1961.
15. Dowling, H. E.: Staphylococcal Endocarditis. *Medicine* 31:155, 1952.



**Familial Hemolytic Anemia With Heinz-Body Formation After Splenectomy and Mesobilifuscinuria in a Boy With Abnormal Hemoglobin: Case Report**

H. H. Jacobi et al (Universitäts-Kinderklinik, Mathildenstr. 1, Freiburg / Br. Germany)  
*Deutsch Med Wschr* 92:98-104 (Jan 20) 1967

A 5-year-old boy had hemolytic anemia due to abnormal hemoglobin, mesobilifuscinuria, and Heinz-body formation after splenectomy for suspected hereditary spherocytosis at the age of 3 years. There was compensated normochromic anemia before and after splenectomy; no transfusion had been required. Despite the splenectomy there was marked reticulocytosis. The Price-Jones curve was shifted to the right, osmotic resistance of the erythrocytes was broadened. The bone-marrow showed erythroblastic hyperplasia. Numerous erythrocyte enzymes and erythrocyte porphyrins were, in correspondence with the reticulocytosis, increased in an uncharacteristic fashion. The patient's hemoglobin had an increased tendency toward oxidation, and on heat denaturation there was a heat-labile hemoglobin fraction of 25%. The patient's father, brother, and close relatives are all normal, but findings in the mother suggest a mild form of the child's disease.

**Pulmonary Alveolar Proteinosis**

J. Ramirez-R (3900 Loch Raven Blvd, Baltimore)  
*Arch Intern Med* 119:147-156 (Feb) 1967

The clinical course of three cases of pulmonary alveolar proteinosis treated with massive pulmonary lavage is described. The lungs of the first case were irrigated on four occasions, utilizing a total of 28 liters of isotonic sodium chloride solution containing heparin, heparin and acetylcysteine, or acetylcysteine alone; the lungs of the second and third cases were irrigated ten times and four times, respectively, with 39 and 48 liters of irrigating fluid of similar composition. Large volumes of proteinaceous material were removed with lavage, and shortly thereafter, clinical, roentgenographic, and physiological improvement was observed. No difference in the clinical response could be demonstrated whether heparin, heparin and acetylcysteine, or acetylcysteine alone were added to the irrigating fluid. Histological observations suggest that after lavage, the remaining proteinaceous material is cleared, at least in part, by a phagocytic response. The data support the hypothesis that alveolar proteinosis manifests itself as a dysfunction of the pulmonary clearing process and that this dysfunction may be corrected at least temporarily by bronchopulmonary lavage.

## WHAT IS YOUR DIAGNOSIS?

*Prepared by the*

*Department of Radiology, University of Arkansas  
School of Medicine, Little Rock*



**ANSWER ON PAGE 83**



**HISTORY:** Twenty-two year old white male with a history of gradual swelling and tenderness of the right thigh for one year. The patient was found to have hemophilia at the age of two years.

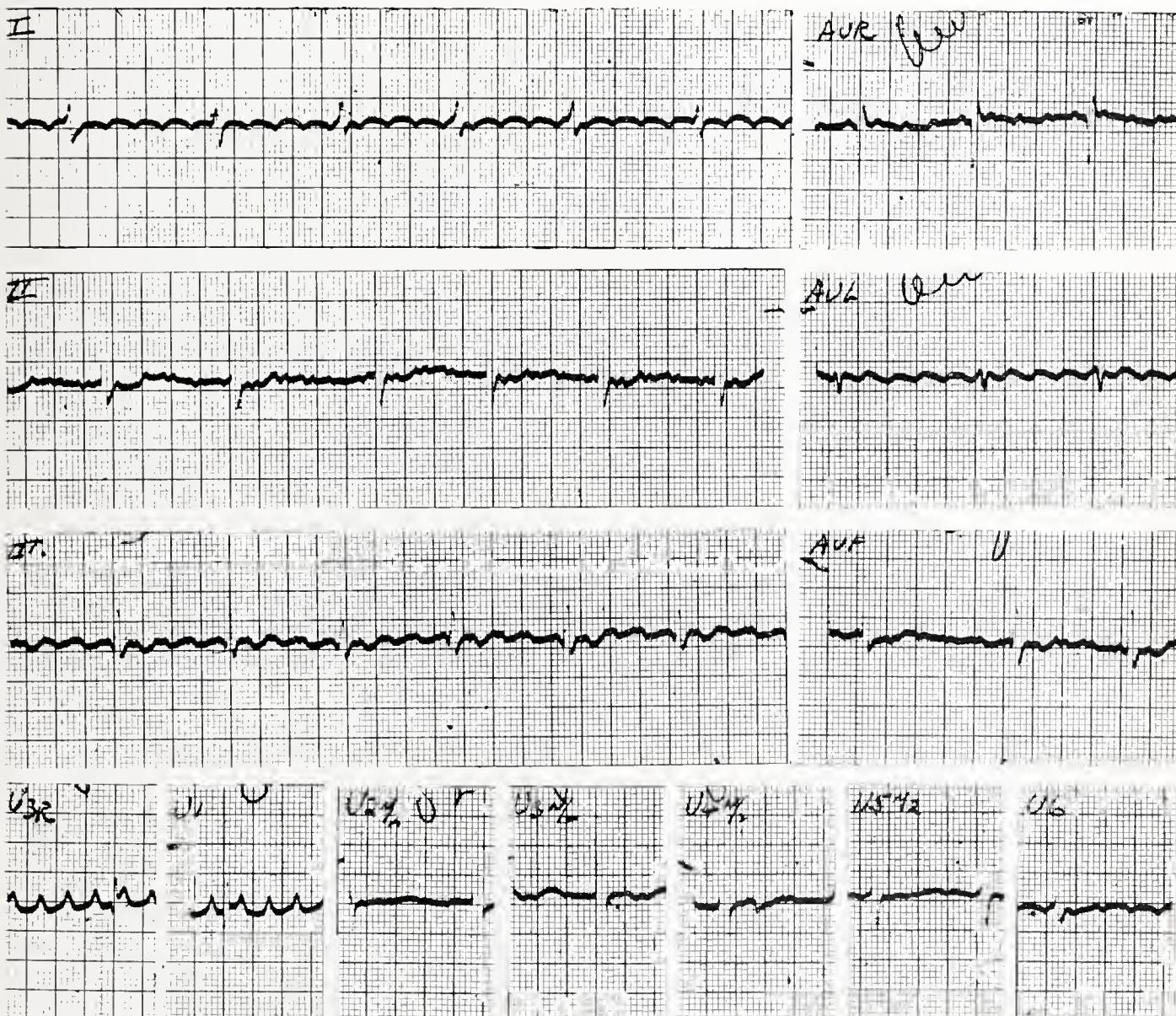


## **ELECTROCARDIOGRAM**

## OF THE MONTH

AGE: 58 SEX: F BUILD: Slender BLOOD PRESSURE: ?  
CARDIAC DIAGNOSIS: Rheumatic heart disease  
OTHER DIAGNOSES: Cerebral embolus  
MEDICATION: Digoxin .25 mgm daily  
HISTORY: None given

**ANSWER ON PAGE 83**



The Department of Medicine, University of Arkansas Medical Center  
James S. Taylor, M.D., Professor of Medicine

## **Yellow Fever Vaccination**

Ten years ago Dr. John T. Herron, the State Health Officer succeeded in having a *Designated Yellow Fever Vaccination Center* established at the Arkansas State Department of Health, with the time of administration fixed as 10:00 a.m. on Monday, except holidays. Prior to 1957, any Arkansan needing Yellow Fever vaccination for international travel had to take the extra time and expense to secure it in another state.

The accompanying map of Arkansas shows the total utilization of this service by county of residence of the Arkansas Travelers for the 10 years of operation. There were 132 people from other states who also utilized this service of the Arkansas Designated Yellow Fever Vaccination Center. The number of people from each county by calendar year given yellow fever vaccine is presented in tabular form and shows the increase particularly from Saline and Pulaski counties associated with industry, whereas some of the general increase is due to families of servicemen who wish to accompany them. The amount of vaccinations explained by new tourist's needs obviously is steadily increasing, but this is no indication of the number of trips abroad the individual makes.



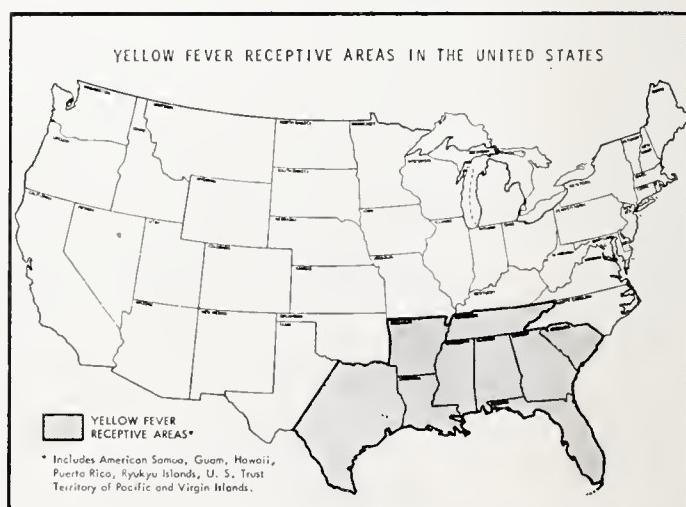
subsequently, since Yellow Fever vaccinations are now valid for ten years.

Much progress has been made throughout the world in mosquito eradication and in surveillance of Malaria, as well as Yellow Fever, yet both diseases persist and the traveler to endemic areas does well to utilize protective measures available, especially Yellow Fever vaccination.

Yellow Fever Receptive Areas in the United States are shown on the accompanying United States map.

Travelers, who within 6 days (9 days for Ceylon, India, and Pakistan) of their arrival in yellow-fever-receptive countries, have come from or passed through an area considered as infected with yellow fever by the country of arrival, are required to present a valid certificate of vaccination against yellow fever.

The period of validity of the International Certificate of Vaccination or Revaccination against Yellow Fever is now 10 years beginning 10 days after vaccination, or on the date of revaccination if within a 10-year period. The 18th World Health Assembly extended the period of validity of this certificate from 6 to 10 years. Yellow Fever Vaccination Certificates now in force are automatically extended for a period of 10 years from the date of vaccination. In certain instances when



entering India, Pakistan or Ceylon the certificate does not become valid until the twelfth day. If revaccination against yellow fever is within 10 years after a previous vaccination, keep the old certificate for 10 days (12 days for Ceylon, India, and Pakistan) as evidence that the new certificate is for revaccination. Standard course — 1 inoculation.

Jungle yellow fever is always present somewhere in the moist tropical forests of the Americas in the form of periodic outbreaks that do not last long in any one place. Suitable forests extend from Mexico and Guatemala on the north through the Isthmus of Panama and the Amazon Valley

to southern Brazil and Argentina. Anybody who enters such forests for whatever reason should be vaccinated against yellow fever. However, there is no danger of yellow fever in the cities and towns of the countries from which the *Aedes aegypti* mosquito has been eradicated.

In Africa the yellow fever area extends roughly from 15 N. to 10 S., and everybody visiting this area should be vaccinated — because of the widespread prevalence of dangerous mosquitoes in urban, rural, and forest areas.

Pakistan, India, and Ceylon usually require yellow fever vaccination for all persons arriving by air from areas west of these countries.

COUNTY	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966
Arkansas	4	2	7	—	1	2	3	4	5	4
Ashley	—	—	—	—	—	1	1	—	—	1
Baxter	—	—	—	2	—	—	—	1	3	2
Benton	—	—	—	—	4	2	2	—	3	—
Boone	—	—	—	—	—	2	2	2	—	2
Bradley	1	—	—	—	—	—	—	—	—	4
Carroll	—	—	2	—	—	—	—	—	—	1
Chicot	—	—	1	—	—	—	1	—	—	—
Clark	—	—	—	4	—	3	—	6	17	4
Clay	—	—	—	—	—	—	—	—	—	1
Cleburne	1	—	—	—	—	—	6	—	—	—
Cleveland	1	1	—	—	—	—	—	—	1	—
Columbia	—	—	—	—	—	—	—	—	2	—
Conway	—	7	—	2	—	2	1	3	—	2
Craighead	1	—	—	—	—	—	—	—	—	—
Crawford	—	4	—	1	—	—	—	3	—	1
Cross	—	—	—	—	1	2	—	—	—	—
Dallas	—	1	—	—	1	1	—	1	—	—
Desha	—	—	—	—	—	—	—	—	—	3
Drew	—	2	—	—	—	—	2	12	—	1
Faulkner	—	—	1	2	1	5	1	—	5	2
Franklin	—	—	—	—	—	4	—	—	3	2
Fulton	—	—	—	—	—	—	—	—	1	—
Garland	—	8	9	—	—	5	2	1	10	13
Grant	4	—	—	—	—	—	—	1	—	1
Greene	—	—	—	—	—	—	5	—	—	—
Hempstead	—	—	—	—	—	—	—	1	—	—
Hot Spring	1	—	—	—	—	7	1	—	—	1
Howard	—	—	—	—	—	—	—	—	2	—
Independence	—	3	2	—	2	1	—	3	5	9
Izard	—	—	—	—	2	3	4	9	—	1
Jackson	—	—	1	1	—	4	—	2	—	1
Jefferson	4	12	2	—	14	9	2	8	4	10
Johnson	2	—	7	—	4	—	—	2	1	1

## FEATURES

COUNTY	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966
Lafayette	---	---	---	---	---	---	10	---	---	---
Lawrence	1	---	---	---	---	---	---	---	---	---
Lincoln	5	---	---	3	---	---	3	2	1	4
Little River	---	---	---	---	---	---	---	---	1	1
Logan	---	---	---	---	---	1	2	1	1	1
Lonoke	---	1	---	---	7	3	4	5	5	6
Madison	---	---	---	---	---	---	---	---	2	---
Marion	---	---	---	---	---	---	1	---	---	---
Miller	---	---	---	---	1	---	---	---	1	---
Monroe	---	---	1	---	---	---	---	2	---	1
Montgomery	---	---	---	---	---	---	---	3	---	---
Nevada	---	---	3	---	---	---	---	---	---	---
Ouachita	---	---	---	3	2	---	4	---	2	5
Perry	---	---	---	---	---	---	---	---	---	1
Phillips	---	---	---	2	---	1	---	---	---	1
Pike	---	---	---	---	---	---	---	---	---	2
Poinsett	---	---	---	---	---	---	---	4	---	---
Polk	---	---	---	---	6	4	---	1	1	---
Prairie	---	---	1	---	---	---	---	2	---	---
Pulaski	61	26	25	27	75	63	67	---	71	92
Randolph	---	---	---	---	---	---	---	---	2	---
St. Francis	---	---	---	---	---	---	---	---	1	6
Saline	16	11	9	4	4	3	5	25	28	20
Scott	---	---	---	---	---	3	---	---	---	---
Searcy	1	---	---	---	2	---	1	5	2	---
Sebastian	5	---	2	6	4	12	4	3	12	---
Stone	---	---	---	---	---	---	---	---	1	---
Union	4	2	---	14	1	---	4	4	8	13
Van Buren	---	3	---	---	---	---	1	5	---	---
Washington	2	3	1	2	1	8	3	7	1	10
White	3	2	1	1	2	1	4	5	8	5
Woodruff	---	---	---	2	1	2	1	1	---	---
Yell	---	---	---	3	---	---	---	4	---	---
Total Arkansans	118	87	75	79	137	153	149	214	212	261
Out of State	16	6	6	9	12	16	14	8	19	26
Grand Total	134	93	81	88	149	169	163	222	231	287

**Trauma and the Localization of Tumor Cells**

B. Fisher, E. R. Fisher, and N. Feduska (Univ of Pittsburgh School of Medicine, Pittsburgh)  
*Cancer* 20:23-30 (Jan) 1967

Injection of <sup>51</sup>Cr-labeled Walker tumor cells either intravenously or via the aorta into normal rats, or those subjected to mechanical, chemical, or surgical trauma of a hind limb resulted in: (a) equal distribution of cells to both hind legs when neither was traumatized, (b) a lodgment of a

greater number of cells in legs subjected to either of the three types of trauma than in the untraumatized extremity of the same animal, (c) a failure of adequate heparinization to alter cell localization at sites of trauma, and (d) no difference in tumor cell localization between normal limbs of control or traumatized animals, minimizing the role of stress or other systemic factors. Increased numbers of tumor cells lodge at sites of trauma and may well be the reason for the observed augmented number of metastases.

**RESOLUTIONS**

WHEREAS, God in his infinite mercy has seen fit to call from our midst, Dr. Jesse E. Stevenson, and

WHEREAS, Dr. Stevenson had faithfully served his patients in the community at large throughout his many years of medical practice, and

WHEREAS, Dr. Stevenson, during his years of practice reflected throughout his entire medical career the highest ideals of the profession, and,

WHEREAS, the Sebastian County Medical Society mourns his loss,

THEREFORE, BE IT RESOLVED by the Sebastian County Medical Society in regular meeting assembled on April 11, 1967 hereby adopts these resolutions and directs that a copy be spread on the minutes of the Society and that a copy be furnished to the family and that a copy be published by the Journal of the Arkansas Medical Society.

WHEREAS, the recent passing from this life of our esteemed colleague and friend, Dr. Garland D. Murphy, Jr., has caused us all to be saddened, and

WHEREAS, Dr. Murphy gave generously of his time and talents in serving the medical profession; as a member and officer of our Society, as a member and officer of the Arkansas Board of Medical Examiners and as a member of the Board of Directors of Union Memorial Hospital, and

WHEREAS, he was active in community and civic affairs; The American Legion, The Boys Club of El Dorado, The Masonic Lodge, other organizations, and

WHEREAS, Dr. Murphy served our country with patriotism and valor during World War II, and

WHEREAS, he endeared himself to countless patients as he ministered to them tirelessly for more than thirty years;

BE IT THEREFORE RESOLVED:

THAT, expression of our heartfelt loss and sympathy be extended to the bereaved family, and

THAT, a copy of this resolution be made a part of the permanent records of our Society, and that this resolution be published in the Journal of the Arkansas Medical Society and that a copy of this resolution be forwarded to the family of Dr. Murphy.

**ANSWER—What's Your Diagnosis?**

**DIAGNOSIS:** Pseudotumor of hemophilia.

**X-RAY FINDINGS:** Irregular eroded areas involving the right proximal femur. There is also sclerosis of bone. There is an irregular soft tissue mass with calcification in its proximal medial part.

**ANSWER—Electrocardiogram of the Month**

**RATE:** A: 320 V: 80      **RHYTHM:** Atrial Flutter

**PR:** —      **QRS:** .08      **QT:** —

**SIGNIFICANT ABNORMALITIES:**

Atrial flutter with variable block, mostly 4:1  
Delayed intrinsicoid in V<sub>3R</sub>

**INTERPRETATION:** Abnormal  
Atrial flutter with 4:1 block  
Right ventricular hypertrophy  
Left atrial enlargement (?)

**COMMENT:**

The emboli occurring in patients with rheumatic heart disease are frequently associated with a change in rhythm as in this instance.



## EDITORIAL

# The Fifth Horseman: Alcoholism

Albert F. Rosendale, M.D.\*

**A**lcoholism as an illness has been a step-child of our culture since antiquity. It has grown in time to become the "rejected illness" in the unfinished task of medicine to identify man's illnesses, and to heal the sick. Why, then, is the alcoholic rejected? There is a deep-rooted conflict in the existing doctrine that the alcoholic must be willing to accept professional help to halt his illness. The conflict arises because of one missing basic fact: Where and when is this professional help to be found? Can it be found in every doctor's office, clinic, or in those institutions dedicated to the relief of human suffering? The answer, all too often, is no! By rejecting alcoholics and alcoholism most physicians are neglecting a deep human responsibility to this one socially destructive illness.

Alcoholism is coming home to roost, too often, in the morgues and hospitals of the nation. One could say it is epidemic when alcoholism is implicated in 65% of all car accidents occurring in one state. Non-acceptance of a disease will not make it go away by itself, and failure to reduce the increase of alcoholism does not add to our preventive laurels.

Physicians by virtue of the Hippocratic oath are dedicated to the relief of human suffering, regardless of the cause. The uncooperative diabetic patient goes into a coma, a true emergency situation and is not rejected by medical personnel because of his shortcomings. The ulcer patient blowing a hole in his stomach by refusing to follow a treatment regime is accepted unreservedly and followed to a medical or surgical cure. The cardiac victim returning in severe decompensation brought on by outright refusal to cooperate, is received without reluctance and treated as another individual whose obstinacy is

accepted as a psychic overlay. This list could go on and on endlessly with the doctor keenly aware that the emergency situation resulted by the patient's own hand. But, whenever the alcoholic patient or the family of the patient requests treatment for the disease, then it becomes a different picture. How many physicians will accept such a patient for definitive treatment? The number is small, for the general attitude is that the patient brought the illness deliberately on himself. How many doctors will give but token treatment to the delirium tremens patient who presents a true emergency situation, then dismiss him with no advice other than to seek the assistance of AA, often with not even that suggestion?

Physicians occupy a vaulted position in our society. They are the bulwark of health information and their attitudes will condition the thinking of the people in their communities. How can we expect society to react differently where negativism to a disease exists among members of the medical profession? We have deliberately ignored the problem of alcoholism because of the prejudices deeply rooted in our own shortcomings.

What are the reasons behind the physician's refusal to accept the alcoholic? Does he fear the patient or himself? Is he afraid that the patient will shatter his sense of personal omnipotence and, if so, why? Does he use this refusal as a form of denial wherein he is not forced to face his own problems with alcoholism? Does he use it as a punitive weapon, transferring his hostility from a member of his own kin to a non-related person? Is he so sadistically inclined as to enjoy the suffering of this particular group? Is he too lazy, too busy or just indifferent? Or does he feel he will be socially and professionally stigmatized like

\*20 Monica Drive, Little Rock, Arkansas.

the V.D. doctor once was? Whatever the reasons are, they are not consistent with the fundamentals of medical practice and preventive medicine.

There are 10 million known alcoholics and problem drinkers in the United States. This represents easily 10% of the total adult population. This is an awesome figure exerting tremendous impact. Add another 5 or 10 million who are statistically unknown and the figure approaches truly monumental proportions. These are the men and women who are floundering helpless in the throes of their disease, not knowing where to turn. Some find death or injury on the highways, suicide, mental, moral and physical deterioration, and some find sobriety. Some 350,000 have found sobriety thru AA, but this organization can reach only a few. Over 9 million are struggling hard to throw off the shackles without

encouragement from the medical profession, because of apparent disinterest. Are they so hopeless?

There must surely be a way to reach these patients, but as yet it is unknown. They are thinking, feeling, breathing people who have a chink in their armor somewhere, and to find it, physicians along with other professionals must take the time and interest to seek it out. But there is one thing certain, so long as we absolve ourselves from our responsibilities to these patients, the answers will never be forthcoming. We should not expect AA, or other agencies, to assume the responsibility rightly belonging on the shoulders of physicians, and make live the word of ISAIAH: "For a small moment have I forsaken thee; but with great mercies will I gather thee." How else can we learn what man is?

## MEDICINE IN THE



### MEDICAL SCHOOL EXPENDITURES FOR REGULAR OPERATING PROGRAMS

Medical school expenditures for regular operating programs in 1964-65 reached a new high of \$319.7 million, an increase of 12 per cent over the previous year's expenditures. Regular operating program expenditures are made in support of the education and service function of the medical school from such intramural fund sources as state appropriations, general university funds, gifts, grants, tuition and endowment income. Both state supported and privately supported medical schools are having increasing difficulty in meeting the mounting costs of regular operations and the increasing demands for expanded educational programs. Congressional recognition of this need resulted in the amendment in 1965 of the "Health Professions Educational Assistance Act," enabling the Surgeon General to make basic improvement grants to U.S. medical schools to support regular educational programs. In 1966, a total of \$6.6

million was awarded to U.S. medical schools or an average of \$76 thousand per school. These federal funds, while urgently needed, have served to meet only a small portion of the need for additional support for the regular operating programs of U.S. medical schools.

Table 1 presents the total dollar value of regular operating program expenditures for each of the academic years 1958-59 through 1964-65. Also presented are the minimum, maximum and average per school expenditures in each year and the percentage increase in the period 1958-59 to 1964-65.

A distribution of the annual regular operating program expenditures of four-year schools of medicine is presented in Table 2 for the academic years 1958 and 1964. In 1958, 57% of the schools expended \$2 million or less for regular operations whereas in 1964 only 19% of the schools expended less than \$2 million.

The increased level of expenditures for regular

TABLE 1  
Regular Operating Program Expenditures  
(In Thousands of Dollars)  
Per Individual School

Academic Year	Minimum*	Maximum	Average	Total	No. of Schools
1958-59	\$ 648.0	\$5,956.0	\$2,157.9	\$174,791	85
1959-60	735.7	8,676.7	2,234.4	192,158	86
1960-61	795.6	7,208.6	2,461.0	214,108	87
1961-62	690.3	8,037.8	2,754.9	239,679	87
1962-63	757.1	8,761.7	2,943.6	256,096	87
1963-64	939.3	8,811.7	3,385.0	286,158	87
1964-65	1,063.5	9,882.7	3,781.3	319,665	87
Percentage Increase					
1958-59 to 1964-65	64%	66%	75%	83%	2%

\*Minimum expenditures exclude two-year schools of medicine.

TABLE 2  
Annual Expenditure from Funds for Regular Operating Programs of Four-Year Medical Schools  
1959 and 1965

Annual Expenditure Level	No. of 4-Year Medical Schools	
	1958-59	1964-65
Less than \$1 million	12	---
Between \$1 and \$2 million	34	16
Between \$2 and \$3 million	20	18
Between \$3 and \$4 million	6	18
Between \$4 and \$6 million	9	20
Between \$6 and \$8 million	---	9
More than \$8 million	---	3
Total	81	84

operating programs are dwarfed by comparison with the more than threefold increase in sponsored program expenditures that has occurred in the period 1959-1965.

It has become apparent that better mechanisms for obtaining unrestricted funds must be developed from both federal and private sources if medical schools are to continue their obligation to provide the best possible education and service programs.

#### THE MONTH IN WASHINGTON

Washington, D. C.—The American Medical Association proposed that Congress set up a National Commission on Health Resources and Medical Manpower with broad powers to supervise the drafting of physicians for military service.

The AMA recommendation was presented by Dr. Albert H. Schwichtenberg, chairman of the AMA Council on National Security, at a Senate Armed Services Committee hearing on S. 1432 which would provide for a four-year extension of the present draft law expiring June 30.

Other AMA recommendations for modifica-

tion of the doctor draft program included:

—Expansion of the physician draft pool to include women doctors.

—Making subject to draft call foreign physicians under 35 years of age, with permanent visas or who have subsequently become citizens, and who may not be subject to call because they were not deferred from induction while under age 26.

—Limiting credit for fulfillment of the draft obligation to only service performed in the armed services. (Under the old law, service in the Public Health Service could satisfy a physician's obligation for active military duty.)

—Routine transfer, upon completion of an internship, of the jurisdiction of physicians to the local draft board serving the area in which the physician is engaged in training or practice.

—Changes in the pay and promotion policies for military physicians designed to increase the retention of career military physicians.

"Our primary recommendation . . . is the creation of a National Commission on Health Resources and Medical Manpower," Dr. Schwichtenberg said. "This Commission would replace and be responsible for the functions of the present National Advisory Committee and the Health Resources Advisory Committee. This new Commission, under the direction of the President, would have the responsibility of maintaining a proper balance of health personnel, within existing resources, among the Armed Forces, other Government agencies, and the civilian population. Requests of the Secretary of Defense for health manpower in the military would be reviewed and approved by the Commission. The Commission would establish for the Selective Service System criteria for classifying, reclassifying and determining the order of selection for health personnel. Under this proposal, the present State Advisory Committees would be redesignated as State Health Manpower Committees, whose activities would be coordinated by the National Commission. It is further recommended that the Commission should be constituted from among persons of outstanding national reputation in the health-care fields, and its composition should include substantial representation from physicians in private practice."

\* \* \*

The National Highway Agency announced tentative standards for emergency medical serv-

ices provided for persons injured in traffic accidents.

The federal standards give the states broad authority in implementation and also are subject to comment by the states before they become final. The state programs must be in full operation before Jan. 1, 1969, or a state could lose up to 10 percent of its allotted federal highway construction funds.

Although the federal standards apply only to traffic accidents, they are expected to necessarily set a pattern for emergency medical services generally.

Dr. William Hadden, Jr., head of the National Highway Safety Agency, said the emergency care regulations are designed to provide quick response to accidents, sustain and prolong life through proper first aid measures, reduce the likelihood of permanent disability and prolonged hospitalization, and provide speedy transportation of accident victims to hospitals.

The federal standards would require states to:

- Appoint a full-time medical emergency services coordinator to have primary responsibility for the program.

- Prepare a comprehensive plan for emergency services throughout the state.

- Establish training, licensing and related requirements for ambulance drivers, attendants, and dispatchers.

- Coordinate ambulance and other emergency medical care systems, including requiring ambulances to carry two-way radios hooked up with the police and hospitals.

- Provide first aid training and refresher courses for emergency service personnel and policemen and firemen, and encourage first aid instruction for the public.

Other draft regulations with medical aspects:

- Make physical and eyesight examinations for driver licensing.

- Do compulsory blood tests for alcohol on drivers in accidents.

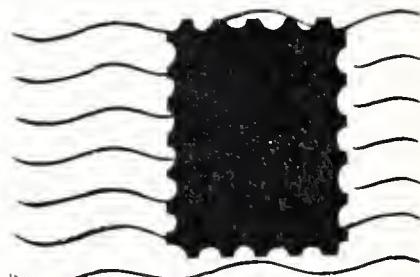
\* \* \*

Dr. John C. Nunemaker, chairman of the American Medical Association's Department of Graduate Medical Education, told a House Judiciary Subcommittee that the AMA's position continues to be that graduates of foreign medical schools who come to the United States for training "should be encouraged in every possible way

to return to their home countries where their skills are so badly needed."

Dr. Nunemaker suggested that the five-year length of stay provision for physicians on exchange programs be reconsidered. Every year beyond two or three years "intensifies the desire of the visitor to stay longer," he noted.

## LETTERS



**TO THE EDITOR**  
**THE LAW SCIENCE ACADEMY OF AMERICA**  
**Crested Butte, Colorado 81224**

May 8, 1967

Dr. Alfred Kahn, Jr.—Editor:

My Dear Doctor: Re: Summer Instructional Program of The Law-Science Academy on "Legal Medicine and Elements of Medico-legal Litigation for Physicians and Lawyers," Crested Butte, Colorado. Six Independent, self-contained weeks, Mon.-Fri., July 10-14, 1967, and succeeding weeks, through and including, Sixth Week, Mon.-Fri., Aug. 14-18, 1967.

The Law-Science Academy, organized in 1954, is a non-profit, charitable, tax-exempt organization of physicians and lawyers who seek to bring the two professions into fruitful cooperation, particularly in bringing competent medical testimony into the trial of civil and criminal cases.

I think you will agree that many physicians have an interest in Medicolegal Problems. This summer will be the eighth season of the Summer Instructional Program at Crested Butte, situated in beautiful mountains in the Rockies, in the Gunnison National Forest, 24 miles from Aspen (as the crow flies) but 1,500 feet higher.

One of our greatest problems, of course, is alerting potentially interested physicians to the fact of the teaching. I am enclosing a mimeographed release containing the names of the anticipated Medical Lecturers, about 4 or 5 of whom appear each week, in the mornings from 8:00-12:25 noon (with two evening sessions 7:30-10:15), leaving the afternoons free for a most enjoyable vacation.

Crested Butte has a great new ski area, and The Crested Butte Lodge is making very low rates to our Registrants and their families.

Physicians and lawyers in attendance will help develop applied Medico-legal Problems of interest to the two professions and members of their families may attend sessions without payment of an additional registration fee. Full tuition Student Fellowships for all six weeks will be granted to Medical Students, and a like number to Law Students. The Academy operates the teaching efforts at a deficit but we should be grateful if you could carry in your next issue, the brief News Story, or if space will not permit, the alternate announcement, revising either, as you may desire.

With sincere best wishes, I am,

Very truly yours,  
Hubert Winston Smith  
Chancellor

April 1967

Dear Colleague:

An International Conference on Leukemia-Lymphoma is to be held in Ann Arbor, October 9-13, 1967. The meeting is one of several events planned in celebration of The University of Michigan sesquicentennial and also will mark the

40th anniversary of the Simpson Memorial Institute for Medical Research.

The bringing together of international and national figures who are contributing to the advance of knowledge regarding leukemia and the related lymphomas should make this an outstanding conference. Emphasis will be primarily on the diseases as they involve man although animal data will be included as needed to illustrate a natural model or to provide other essential information. Consideration in depth will be given to current studies regarding the etiology of the leukemia-lymphomas, recent advances in the biochemical aspects of these disorders, their epidemiology and the statistical aspects of recent trends. The latter portion of the program will be devoted to present-day treatment methods and results.

The foregoing may give you sufficient information to appreciate the scope of the conference. Attached you will find a partial list of speaker participants. You will receive the detailed program later along with information concerning registration fees and accommodations.

We hope you will join us in Ann Arbor October 9-13, 1967.

Sincerely yours,  
Chris J. D. Zarafonetis, M.D.

#### **International Conference on Leukemia-Lymphoma—October 9-13, 1967**

**Speaker:**

Aisenberg, Alan C.  
Massachusetts General Hospital

Andrews, Gould A.  
Oak Ridge Inst. for Nucl. Studies

Athens, John W.  
University of Utah

Beck, William S.  
Massachusetts General Hospital

Bessis, Marcel  
Paris, France

Bryan, W. Ray  
U.S. Public Health Service

Burchenal, Joseph H.  
Sloan-Kettering Inst.

Burkitt, Denis  
London, England

Dalton, Albert J.  
U.S. Public Health Service

**Topic:**

Immunologic Status of the Lymphomas

Bone Marrow Transplantation in Treatment of Leukemia-Lymphoma

Kinetics of Normal and Leukemic Leukocytes

Biochemical Properties of Normal and Leukemic Leukocytes

The Structure and Ultrastructure of Normal and Leukemic Leukocytes

Rationale for Virus Research in Human Leukemia

Long-Term Survivors in Acute Leukemia

African Lymphoma

Detection of Virus in Leukemia and Lymphoma: Electron Microscopy

## FEATURES

Dameshek, William Mount Siani Hospital, NYC	Conference summary
Dmochowski, Leon M.D. Anderson Hospital, Houston	Virus Studies in Human Leukemia-Lymphoma
Fink, Mary A. U.S. Public Health Service	Use of Immunological Techniques in the Study of Leukemia
Frenkel, Eugene P. Southwestern Med. Sch., Dallas	Implications of Circadian Factors in Treatment of Leukemia-Lymphoma
Good, Robert A. University of Minnesota	Role of Central Lymphoid Tissues in Pathogenesis of Malignancy of the Lymphoid System
Gumz, Frederick Christchurch, New Zealand	Introductory Presentation
Gurney, Clifford W. Rutgers Medical School	The Stem Cell Compartment
Hayhoe, F. G. J. Cambridge, England	Clinical and Cytological Recognition and Differentiation of the Leukemias
Karnofsky, David A. Sloan-Kettering Inst., NYC	Chemotherapy of the Lymphomas
Lampe, Isadore University of Michigan	Hodgkin's Disease: A Review of Radiotherapeutic Experience
Meyers, Muriel C. University of Michigan	Treatment of Acute Leukemia in Adults
Miller, Robert W. U.S. Public Health Service	Epidemiology
Murphy, William H. University of Michigan	Virus Studies of Human Leukemia
Nowell, Peter University of Pennsylvania	Chromosome Abnormalities in Leukemia and Lymphoma
Potter, Van R. University of Wisconsin	Some Biochemical Essentials of Malignancy
Rosenberg, Saul A. Stanford University	Results of Radical Radiotherapy of Hodgkin's Disease and Other Lymphomas
Rundles, R. Wayne Duke University	Uric Acid Metabolism in Leukemia-Lymphoma
Schwarz, Robert S. Tufts University, Boston	Immunologic Factors in the Etiology of Leukemia-Lymphoma
Upton, Arthur C. Oak Ridge National Laboratory	The Role of Radiation in the Etiology of Leukemia
Zubrod, C. Gordon U.S. Public Health Service	Present and Future Prospects for Chemotherapy of Leukemia
Zuelzer, Wolf Children's Hospital, Detroit	Treatment of Acute Leukemia in Children

**THINGS****TO  
COME****ANNUAL OTOLARYNGOLOGIC ASSEMBLY****October 14 through 20, 1967**

The Annual Otolaryngologic Assembly of 1967 will be held October 14 through 20, 1967, in the new Illinois Eye and Ear Infirmary at the Medical Center, Chicago. The Department of Otolaryngology of the College of Medicine of the University of Illinois offers a condensed postgraduate

basic and clinical program for practicing otolaryngologists under the direction of Doctor Emanuel M. Skolnik. It is designed to bring to specialists current information in medical and surgical otorhinolaryngology.

A separate, but correlated course entitled "Head and Neck Radiology Conference" will be conducted by the Department of Radiology for two full days just preceding the Assembly, Thursday and Friday, October 12 and 13, 1967.

Interested physicians should direct communications to the mailing address:

Department of Otolaryngology  
P.O. Box 6998  
Chicago, Illinois 60680

**PERSONAL AND NEWS ITEMS****Dr. Bachman Is Elected**

Dr. David S. Bachman of the Millard-Henry Clinic in Russellville has been elected to the Southwestern Surgical Congress.

**Doctors in AAGP**

The following physicians have been elected to active membership in the American Academy of General Practice: Dr. Robert H. Weaver of Gentry, Dr. William Lee Winters of Earle, Dr. George E. Malone of Atkins, and Dr. Bob G. Smith of Batesville.

**Doctors Participate in Health Program**

Dr. Thomas E. Townsend of Pine Bluff has been elected chairman of the Advisory Group of the Arkansas Regional Health Program. Dr. Winston K. Shorey, Dean of the Arkansas Medical School, serves as co-ordinator of the planning stage for the program. Other members of the advisory group include: Dr. Lee Parker of McGehee; Dr. Thomas Wortham of Jacksonville; Dr. Gilbert O. Dean, Dr. John T. Herron, Dr. M. J. Kilbury, Jr., Dr. Frank Kumpuris, Dr. Jerome S. Levy, Dr. Benjamin Lincoln, Dr. Robert S. Abernathy, Dr. Gilbert Campbell, Dr. Calvin Dillaha, Dr. T. C. Panos, all of Little Rock.

**New Thoracic Society Officers**

The new president of the Arkansas Thoracic Society for 1967-68 is Dr. W. Duane Jones, medical director of the Arkansas Tuberculosis Sanatorium. Dr. Donald L. Miller of Pine Bluff is president elect, Dr. John Schultz of Little Rock is vice president, and Dr. Paul Reagan of Little Rock is secretary-treasurer.

**Dr. Swindoll Is Speaker**

Dr. Bryant S. Swindoll of the Arkansas State Department of Health discussed new programs affecting public health at the 19th annual convention of the Arkansas Public Health Association held at Little Rock in May.

**Doctors Lead Discussion**

Dr. Austin Grimes and Dr. Benjamin Drompp of Little Rock were among the discussion leaders at a regional medical-legal seminar held in Jonesboro in April.

**Dr. Thomas Commended**

Dr. Phil E. Thomas, Jr., of Little Rock, is one of ten aviation medical examiners appointed forty years ago by the Bureau of Air Commerce who have been presented certificates of commen-

dation by the Federal Aviation Administration at Washington on April 10, 1967.

#### **Doctors Participate in Program**

The following physicians were participants in the program for the 13th Annual Convention of the Arkansas State Medical Assistants Society held at Hot Springs in April: Dr. W. N. Jones, Dr. Julian Foster, Dr. Max McGinnis, Dr. William S. Orr, Dr. Harold Hawley, Dr. Joe Scruggs, and Dr. Joseph Norton.

#### **Doctors Speak at Meeting**

Dr. Martin Eisele of Hot Springs, Dr. W. E. Harville and Dr. Nils Pehrson of Little Rock were guest speakers at a meeting of the Arkansas Society of Medical Technologists held at Hot Springs in April.

#### **Dr. Brown Is President-Elect**

Dr. Willis E. Brown of the University of Arkansas Medical Center has been elected president-elect of the American College of Obstetricians and Gynecologists.

#### **Doctors Purchase Building**

Medical Center Development Corporation of Jonesboro has announced purchase of the Medical Center Building in Jonesboro. Dr. Glenn Baker and Dr. Durwood Wisdom of Jonesboro are chief stockholders in the newly formed Medical Center Development Corporation.

#### **Doctors Join in Seminar**

Dr. Horace Murphy and Dr. Walter Selakovich of Little Rock participated in a regional medical-legal seminar at Texarkana on May 5, 1967.

#### **Dr. Duzan Addresses Assistants**

Dr. Kenneth Duzan of El Dorado spoke at a meeting of the Union County Medical Assistants Society in April. His topic was "Automation in the Clinical Laboratory". Dr. George Burton and Dr. J. W. Harper, advisors of the medical assistants, were also at the meeting.

#### **Dr. Townsend Is Speaker**

Dr. Thomas E. Townsend of Pine Bluff spoke at a meeting of the Pine Bluff Kiwanis Club in April. The topic of water fluoridation was discussed at the meeting.

#### **Paragould Gets Surgeon**

Dr. Robert Charles Kee, a general surgeon, has located at Paragould. Dr. Kee is a 1960 graduate of the University of Tennessee.

#### **Dr. Parkerson Is Winner**

Dr. Cecil Parkerson of Hot Springs won the safety control device as a result of a drawing held by Safety Control of Arkansas at its technical exhibit at the Arkansas Medical Society convention in Hot Springs, April 30-May 3, 1967.

#### **Tour Announced**

Announcement has been made of an official tour sponsored by the Ministry of Health of the U.S.S.R., in connection with the Second International Symposium on Medical Treatment in Spas and Physiotherapy. This tour will be held in Moscow and Caucasus on September 4-15, 1967. Participation is open to all members of the medical profession, regardless of their specialty. The all-inclusive cost of the tour is \$865.00. Arrangements in the Soviet Union are on a strictly first-class basis. For more details concerning the tour, contact the following: Jacques M. Sherry, President, Compass Travel Bureau, Inc., 55 West 42nd Street, New York, New York 10036.

#### **Clinton Gets New Doctors' Building**

Construction has started on a building to house offices for two physicians at Clinton, Arkansas. The building is being erected on a two-acre plot adjoining Van Buren County Memorial Hospital.

#### **Dr. Hickey Wins Trip**

Dr. and Mrs. T. H. Hickey of Morrilton completed a three-day vacation in Nassau in April. Dr. Hickey won the trip in a sales incentive promotion sponsored by Central Soya, Inc., of Fort Wayne, Indiana, for dealers and buyers of their animal fodder.

#### **Hospitals Elect Staff Officers**

##### **St. Mary's Hospital, Russellville**

Dr. W. E. King of Russellville is president of the medical staff; Dr. Martin F. Heidgen is secretary.

#### **Physicians Participate in Course**

Four physicians from Arkansas attended a course in corneal transplants in New York, March

11-18. Participating were Dr. Forrest Henry and Dr. James Smith of Little Rock, Dr. Louise Henry and Dr. Murphey Henry of Fort Smith.

#### **Dr. Bost Is Speaker**

Dr. Roger Bost of Little Rock was guest speaker at a meeting of the Texarkana Area Chapter, Muscular Dystrophy Association in April at Texarkana.

#### **Medical-Legal Seminar Held**

The University of Arkansas School of Law, cooperating with the Arkansas Bar Association and the Craighead County Bar Association sponsored a regional medical-legal seminar at Jonesboro in April.

#### **Dr. McClintock Discusses Trip**

Dr. Everett McClintock of Little Rock spoke at a meeting at the Arkansas Power and Light Building at Searcy in April. He discussed his recent tour of duty aboard the medical ship HOPE.

#### **Dr. Durham Elected**

Dr. James W. Durham of Jacksonville has been elected president of the Jacksonville Sertoma Club.

#### **Doctors Attend Symposium**

A postgraduate medical symposium on current surgical problems was held in Hot Springs in March. Among those in attendance were: Dr. Robert Bransford, Dr. Harold Short and Dr. Mitchell Young of Texarkana; Dr. F. M. Wilson of Jonesboro; Dr. J. Albert Johnson of Jacksonville; Dr. Bruce Ellis of Stephens; and Dr. Haymond Harris of Newport. Guest speaker for the program was Dr. Harris B. Shumacker of Indiana University Medical Center. Dr. Joseph Norton of Little Rock was also a speaker.

#### **Dr. Rouse Visits Benton**

Dr. M. O. Rouse of Dallas, president-elect of the American Medical Association, spoke to Benton doctors in March at Saline Memorial Hospital.

#### **Doctors Hold Open House**

Open House was held on April 10 at the new offices of Dr. C. Lynn Harris and Dr. Lowell O. Harris of Hope.

#### **Doctor Baker's Son Dies**

Lieutenant Curtis Richard Baker, Naval physician attached to the Marine Corps, was reported to have been killed in Vietnam on March 28, 1967. Lieutenant Baker was the son of Dr. and Mrs. A. J. Baker of Paragould.

#### **Dr. Phillips Is Fellow**

Dr. William P. Phillips of Fort Smith was installed as a Fellow of the American College of Obstetricians and Gynecologists in April at Washington, D.C.

#### **Dr. Guthrie Is Speaker**

Dr. James Guthrie of Camden was guest speaker at the Methodist Men's meeting in El Dorado in March. Dr. Guthrie discussed his experiences in Nicaragua on the hospital ship HOPE.

#### **New Clinic for Dr. Barksdale**

Construction has begun on the new clinic for Dr. B. A. Barksdale of Rison. Dr. Barksdale said that she hopes to open her offices in the new clinic building sometime in July.

#### **Southwest Medical Group Meets**

The annual meeting of the Southwest Medical Group, composed of medical, dental, and pharmaceutical men, was held in March at Hot Springs. Dr. T. J. Collier of Hot Springs is chairman of arrangements.

#### **Fort Roots Gets New Mental Clinic**

Dr. C. C. Ault of Fort Roots Veterans Administration Hospital in North Little Rock was present at the opening of a mental hygiene clinic at Fort Roots Veterans Administration Hospital in March.

#### **Dr. Stough's Article Featured**

An article on hair transplantation by Dr. D. Bluford Stough, III, of Hot Springs, was featured in a scientific magazine published recently at Kansas City.

#### **Dr. Chudy's Bag Stolen**

A thief took a bag containing physician's equipment and narcotics from the car of Dr. Amail Chudy of North Little Rock in March.

**Seminar Held**

The University of Arkansas' School of Law, cooperating with the Arkansas Bar Association and the Sebastian County Bar Association, sponsored a regional medical-legal seminar at Fort Smith on March 24th. Dr. Benjamin Drompp of Little Rock was included in the seminar discussion leaders.

**Dr. Calhoun Elected**

Dr. Joseph D. Calhoun of Little Rock has been elected chairman of the Board of Chancellors of the American College of Radiology at a recent meeting in Los Angeles.

**Preceptorship Program Approved**

Dr. Robert W. Hunter, Chief of Staff of Lafayette County Memorial Hospital in Lewisville, has received notification from the University of Arkansas Medical School that Lafayette County Memorial Hospital and the Medical Staff have been approved for participation in the University of Arkansas Medical School Preceptorship Program. Dr. John T. Riggan, Associate Professor of Medicine of the University made the inspection of the hospital.

**Dr. Stuckey Addresses Group**

Dr. James G. Stuckey, Jr., plastic surgeon of Little Rock, told of his tour of duty in South India at the Christian Medical College in Vellore, when he addressed the First Methodist men's group in Hot Springs in April.

**Dr. Harris to Paragould**

Dr. Ruben H. Harris, a Paragould native, has opened an office for the general practice of medicine at 113 West Court Street in Paragould. Dr. Harris was affiliated with a group practice in West Memphis before moving to Paragould.

**Dr. Wilson Is Diplomate**

Dr. Larkin M. Wilson of El Dorado, Arkansas was recently made a Diplomate of the American Board of Internal Medicine.

**Memorial and Honor Fund Gift**

The University of Arkansas School of Medicine has received a gift to the Memorial and Honor Fund in memory of Dr. David Taylor Hyatt; it was given by Dr. and Mrs. C. Lewis Hyatt of Monticello, Arkansas.

**Dr. Charles Garland Hinkle**

Dr. C. G. Hinkle, age 91, of Batesville died March 31, 1967. He was born in Lunenburg and was a member of the First Presbyterian Church. Dr. Hinkle retired several years ago from active practice as an eye, ear, nose and throat specialist. He was graduated from Washington University Medical School in 1903 and interned at the City Hospital in St. Louis. He was a member of the Arkansas Medical Society and the Fifty Year Club. He had been examining physician for several railroads and insurance companies. Dr. Hinkle was among the few remaining veterans of the Spanish-American War. He also served his country in World War I, leaving the service as a First Lieutenant. He received a citation and medal for his service as a member of the Selective Service Board during World War II. Surviving is his widow.

**Dr. William Bruce Center**

Dr. William B. Center, age 78, died April 28, 1967. Dr. Center had been a member of the medical staff at the State Sanatorium in Booneville for ten years. A World War I veteran, he was a member of Fort Smith First Presbyterian Church, Logan County Medical Society, Arkansas Medical Society and American Medical Association. He was a 32nd Degree Mason. Survivors include his widow and one daughter.

**Dr. William Howard Smith**

Dr. W. H. Smith of Bono died May 1, 1967 at the age of 87. He was born in Arkansas and had lived in Bono for the past thirty-five years. His parents, Mr. and Mrs. David Smith, were pioneers in developing the area. Dr. Smith graduated from the Tennessee Medical School in 1908. He was an honor student and president of his class. He started his practice in 1908 in Herndon Community. He had been the Frisco Railroad surgeon for several years. He was a member of the Craighead-Poinsett County Medical Society, the Arkansas Medical Society and the American Medical

Association. He received his "50 Year Pin" in 1958. He and his wife celebrated their Golden Wedding anniversary August 4, 1960. Survivors include his widow, two daughters and three sons.



## PROCEEDINGS OF SOCIETIES

### **Mississippi County**

Dr. August R. Remmers, Jr., co-director of the Adult Renal Metabolic Laboratory, University of Texas, was the guest speaker at a meeting of Blytheville Air Force Base physicians and members of the Mississippi County Medical Society held in April.

### **Washington County**

Dr. James K. Patrick, president of the Washington County Medical Society, recently held discussions with the chairman of the Public Service Committee of the Northwest Arkansas Life Underwriters Association regarding a medic alert project in which the two groups are interested.

### **Pulaski County**

Dr. Gilbert Dean, president of Pulaski County Medical Society, participated in a panel discussion on Medicare in April. The meeting was held at a delegate assembly of the Health and Welfare Council at Little Rock.

### **Pope-Yell County**

A new program for arthritis victims was introduced by the Arkansas Chapter of The Arthritis Foundation to the physicians of Pope County in March. Dr. Stanley Teeter is president of Pope-Yell County Medical Society.

Pope-Yell County Medical Society helped with the Pope County measles clinic which was held in April at Russellville. Dr. W. H. Lane is the Pope County Health Officer.

### **Miller County**

Members of the Bowie and Miller County Medical Societies and the Bowie and Miller Coun-

ty Bar Associations met in March to discuss medical testimony in courts. Dr. John S. Griffin is president of Miller County Medical Society and Dr. Russell G. Walling is president of Bowie County Medical Society in Texas.

### **Council of the Arkansas Medical Society**

**April 9, 1967, 12:00 noon,**

**Arlington Hotel, Hot Springs**

The Council of the Arkansas Medical Society met at 12:00 noon on Sunday, April 9, at the Arlington Hotel in Hot Springs. Present were: Whittaker, Norton, Shuffield, Saltzman, Kahn, Gray, Edwards, Millar, Bell, Townsend, Thomas, Burton, Sizemore, Kemp, Kennedy, P. Kolb, Morrison, Fowler, Long, Koenig, Edgar Easley, Euclid Smith, Harley Darnall, Lee Parker, Mr. Paul Harris, Mr. Eugene Warren, Mr. Schaefer, and Mrs. Karlton Kemp.

Business was transacted as follows:

1. After hearing the report of the Chairman of the Sub-Committee on Tuberculosis Control, Dr. Harley Darnall, upon the motion of Saltzman and Norton, the Council voted approval and directed that the report be referred to a Reference Committee for presentation to the House of Delegates.

2. Treasurer Ben Saltzman presented the annual report of audit and moved its acceptance and approval. Upon the second of Norton, the Council so voted.

3. Dr. Thomas discussed various aspects of discriminatory practices by the Rehabilitation Service and stated that he requested no action on the matter; that he simply wished to bring the practice to the attention of the Council.

4. Upon the motion of Koenig and Kemp, the Council decided to take no action at this time to establish additional committees to review Medicare claims. Mr. Schaefer was directed to request additional committees when and if the need arises.

5. Dr. Whittaker read a proposed statement of policy for liaison with the Welfare Department. After several amendments presented by Dr. Norton, the Council, upon the motion of Norton and Kolb, approved the amended policy statement. It was officially noted that Dr. George Burton did not vote on the motion. A copy of the approved statement is attached hereto.

6. After hearing the minutes of the meeting of the Executive Committee of March 23, upon the

motion of Whittaker and second by Edwards, the Council voted its approval.

7. Dr. Norton reported on the Conferences being held by radiology and pathology technicians with regard to a State licensing law. It was noted that there is a great divergence of opinion on the subject. The Council agreed that the matter should be a subject of continuing interest and attention by the Arkansas Medical Society. It authorized the Society attorney, Mr. Warren, to consult with the radiology and pathology groups and report on the progress of the discussions.

8. Mr. Schaefer reported that he had been advised by the State Health Officer that there was considerable confusion in the expiration of terms of the various members on the State Board of Health. After further discussion by Mr. Warren and upon the motion of Norton and Shuffield, the Council directed Mr. Schaefer to request the State Health Officer to have the Board's attorney, Mr. Eldredge, confer with Mr. Warren at an early date to decide on a solution to the problem. It was requested that all County Societies be notified of the vacancies occurring prior to the coming Convention.

9. In view of the fact that the Chairman of the Constitutional Revisions Committee, Dr. Ellis, was not present, Dr. Norton suggested that no action be taken regarding the combining of the various Fee Schedule Committees.

10. Dr. Norton notified the Council of plans being made by ARK-PAC for a "Know Your Government" meeting during the summer. He called attention to the Arkansas Careers Program, and to the report of the Ad Hoc Committee on Education and Family Practice, which was before each Councilor.

11. A resolution opposing certain aspects of the Heart, Cancer and Stroke Program in Arkansas was received and filed upon the motion of Norton and Townsend. After considerable discussion of the dearth of information on the status of the Heart, Cancer and Stroke Program in Arkansas, upon the motion of Shuffield and Norton, Dr. Lee Parker, the Medical Society representative on the Heart, Cancer and Stroke Advisory Committee, was requested to report at the first meeting of the House of Delegates, giving the membership information on the planning of the Program. Report attached hereto.

12. Reviewed the AMA Judicial Council state-

ment on the ethics of the doctor ownership of pharmacies and drug companies. By general approval, the Council indicated its full support of the Judicial Council.

13. Upon the motion of Koenig and Kennedy, voted to send a member of the Committee on Physical Fitness and School Health to the 11th National Conference on Physicians and Schools, in Chicago October 4, through 7, 1967.

14. After hearing an AMA Judicial Council opinion that use of certain medical credit card plans is unethical, the Council voted that the County Medical Societies should be advised to refer credit card plans to the Society's legal counsel for review before adoption. Motion by Koenig and Kennedy.

15. Dr. Saltzman reported that the State Health Department Laboratory had been virtually destroyed by a fire and was currently inoperative in some departments. He reported that the Department was temporarily unable to free funds for repair of the damage. He suggested a \$10,000.00 interest-free, ninety day loan from the Medical Society to the Health Department for emergency repairs. After a discussion of the legal difficulties in repaying the money, it was moved by Saltzman and Kennedy that the money be made available in a manner which could be legally repaid and, subject to the approval of the House of Delegates, a show of hands revealed five voting members opposed to the motion and twelve in favor.

16. Approved upon the motion of Burton and Townsend, a resolution by the Union County Chapter of the Medical Assistants Society urging that membership in the American Association of Medical Assistants be optional, as is membership in the American Medical Association.

17. Mr. Schaefer called to the attention of the Council the fact that the Medical Society's Blue Cross-Blue Shield Plan calls for only \$14.00 per day room allowance, whereas the daily hospital cost projected to 1970 in Arkansas is estimated at \$69.00 per day. Upon the motion of Koenig and Norton, the Council voted to ask the Insurance Committee to review the Society's Group Blue Cross-Blue Shield Plan, with a view to modifying the benefits in keeping with present day costs.

The Council adjourned at 4:00 p.m.

/s/H. W. Thomas, M.D.

Chairman of the Council

**Arkansas Medical Society Policy of  
Liaison With Welfare Department**

I. The Arkansas Medical Society shall be represented by the Executive Committee as designated by the Constitution. This Committee shall be empowered to represent the Arkansas Medical Society with regard to policy, fee schedules, contractual agreements, or changes therein. The Executive Committee shall meet with the Welfare Commissioner on a regular monthly basis.

II. To establish the policy in the Welfare Department that all physicians in Arkansas will provide medical and surgical services to Welfare clients on a usual and customary fee basis. Any fee schedule or separate departmental contracts with separate specialty group will be approved by the Council of the Arkansas Medical Society.

III. The Liaison (Executive) Committee shall be the Arbitration Committee between the Welfare Department and the physicians of Arkansas. In the event that a dispute arises involving fees, services, or policies of the Welfare Department, or for other reasons, the case shall first be submitted to the Liaison Committee. In case agreement cannot be reached between the Welfare Commissioner, the doctor involved, or the Liaison Committee, then the case will be presented at the next called meeting of the Council of the Arkansas Medical Society with the Welfare Commissioner and the doctor involved present.

IV. The Arkansas Medical Society is firm in the belief that Welfare clients are wards of the State and that the responsibility of providing for the needs of these people rests in the State. The monetary needs of the Welfare Department shall be provided by the legislative branch of the State government. Physicians should no longer be asked to subsidize medical care of the Welfare clients.

V. Travel Allowance—The Arkansas Medical Society shall provide all members of the Executive Committee with a 10 cents per mile travel allowance for all regular meetings in Little Rock, or in cases where travel must be done on official business involving a disputed case.

**MINUTES OF  
SUB-COMMITTEE ON TUBERCULOSIS  
TO THE  
ARKANSAS MEDICAL SOCIETY**

The Sub-Committee on Tuberculosis of the Arkansas Medical Society met April 1, 1967 at

the Arkansas Tuberculosis Sanatorium, State Sanatorium, Arkansas. The meeting was called to order at 2:00 p.m., by Dr. Harley C. Darnall, Chairman of the Sub-Committee. Dr. Darnall officially appointed Dr. Sam Kuykendall, Little Rock, a member of the Sub-Committee for this meeting. This action was taken due to the absence of other members of the Committee. The appointment of Dr. Kuykendall as a member of the Committee was agreed upon by the members of the Committee present and Dr. L. A. Whittaker, President of the Arkansas Medical Society. Dr. Kuykendall was needed to complete a quorum for the meeting.

**PRESENT**

\*Harley C. Darnall, M.D., Chairman, Fort Smith

\*Kenneth A. Siler, M.D., Harrison

\*Sam J. Kuykendall, M.D., Little Rock

\*W. Paul Reagan, M.D., Director, Division of Tuberculosis Control, Arkansas State Board of Health, Little Rock

W. Duane Jones, M.D., Medical Director, Arkansas Tuberculosis Sanatorium

L. A. Whittaker, M.D., Secretary by appointment, Fort Smith

**Members Absent—Had Been Contacted  
and Were to Attend**

Albert W. Lazenby, M.D., Dumas

Charles C. Tracy, M.D., Pine Bluff

Joseph G. Shelton, M.D., Ashdown

The Committee members had all read and studied the report of the Tuberculosis Control in Arkansas by Karl H. Pfuetze, M.D., and John B. Stocklen, M.D., which was financed by the Arkansas Tuberculosis Association and co-sponsored by the Arkansas Medical Society.

It was felt the recommendations on pages 38 and 39, in the report, were the parts the Committee would be concerned with and would discuss at this meeting as it was a resume of the entire report.

**RECOMMENDATION NO. 1** — That all phases of tuberculosis control conducted by the State of Arkansas, specifically, the operation of the Division of Tuberculosis and the operation of the Arkansas Tuberculosis Sanatorium, Booneville, should be placed under the direction of the

---

\*Members of the Sub-Committee.

Arkansas State Board of Health. The Committee recognized this will require legislative study and action if any changes are to be made in this recommendation. It was the action of the Sub-Committee that no change be made in the present perspective Boards of the Booneville Sanatorium and the Arkansas State Board of Health.

Because of the difference of opinions which now exists between the staff of the Arkansas State Board of Health and the Arkansas Tuberculosis Sanatorium regarding the conduct of the tuberculosis program, it was the consensus of opinion that a coordinating committee of interested persons should be set up to consolidate the ideas of the State Agencies concerned.

**RECOMMENDATION NO. 2** — The operation of the Arkansas Tuberculosis Sanatorium, Booneville, should be continued for the care of tuberculous patients. The care of the tuberculosis patients at the McRae Sanatorium should be discontinued as soon as possible. This has already been done by law in that the patients at McRae are to be transferred to the Arkansas Tuberculosis Sanatorium by July 1, 1967. The Committee was in agreement with this recommendation and the action taken by the legislators.

**RECOMMENDATION NO. 3** — The Sub-Committee approved the recommendation that a 20-30 bed unit be established at the University of Arkansas Medical Center as a diagnostic and treatment center for tuberculosis. Also, that this facility be limited to a teaching facility including student as well as resident and intern training.

**RECOMMENDATION NO. 4** — This recommendation created the most lengthy discussion among the members. The Committee agrees in principle the Division of Tuberculosis Control should organize one unit for the care of tuberculosis with 20-30 beds in a general hospital preferably not in the Little Rock area. Since the mechanics and actual details of implementing this plan are not available to the Committee, no judgment could be passed on approval of such a plan. It was further recommended if a unit is established it should be given a fair trial before further units are considered or created. The Sub-Committee recommends that those in charge of the program report back to the Committee with a full report after a trial basis period has lapsed. After adequate consideration by the Committee, this would be brought before the Council with

the recommendations of the Committee as to whether further studies on this one unit should be done or the creation of other units. The Committee has taken under consideration that these changes of treating patients in a general hospital is a new concept and if all assumptions made are not correct, it would be disastrous to the Tuberculosis Control Program in Arkansas.

The Committee also recommended a carefully worded statement be prepared evaluating the present concept of the communicability of tuberculosis — that tuberculosis is a chronic disease requiring constant and continuous surveillance and that it is not to be considered a mild non-contagious disease. It was further recommended the statement should be prepared and approved by the Council prior to being released to the news media for publication.

**RECOMMENDATION NO. 5** — The Sub-Committee agreed the Division of Tuberculosis Control should continue its present program and the operation should be expanded to include more case-finding in the high risk groups.

It is further recommended that improved methods and materials for case-finding be emphasized.

**RECOMMENDATION NO. 6** — The Sub-Committee further recommends the Arkansas Tuberculosis Sanatorium expand its services to include treatable, chronic chest diseases which are medically indigent and referred to the Sanatorium by their physician when there are beds available and not in use for the treatment of tuberculosis.

/s/Harley C. Darnall, M.D., Chairman  
Sub-Committee on Tuberculosis



## NEW MEMBERS

DR. THOMAS EDWARD BELL is a new member of Boone County Medical Society. He was born at Camden, Arkansas, and he received his pre-medical education from the University of

Arkansas. He was graduated from the University of Arkansas School of Medicine in 1960. He interned at the University of Arkansas Medical Center. Dr. Bell is a surgeon and his office address is 604 North Spring, Harrison, Arkansas.

Independence County Medical Society announces that DR. CARL T. BECK is a new member. Born at Prescott, Arkansas, he received his preliminary education from Southern State College at Magnolia and from the University of Arkansas. He received his M.D. degree from the University of Arkansas School of Medicine in 1965 and he interned at the U. S. Naval Hospital in Charleston, South Carolina. Dr. Beck's office address is Beck Clinic in Mountain View, Arkansas. He is a general practitioner.

A new member of Sebastian County Medical Society is DR. DOYNE DODD, who is a native of Rector, Arkansas. He obtained his pre-med from the University of Arkansas and was graduated from the University of Arkansas School of Medicine in 1960. He then interned at St. Vincent Infirmary in Little Rock. Dr. Dodd specializes in radiology and is associated with Drs. Brooksher and Rogers at 318 North Greenwood, Fort Smith, Arkansas.

Miller County Medical Society announces that DR. TERRY R. DAVIS has been added to its roster of members. Dr. Davis, born at Camden, Arkansas, attended Harding College and he received his M.D. degree from the University of Arkansas School of Medicine in 1963. He interned at the Medical Center, Columbus, Georgia. He served two years in the U. S. Air Force. He is a general practitioner and his office address is 2304 New Boston Road, Texarkana, Arkansas.

DR. JOHN M. FARMER is a new member of Columbia County Medical Society. He is a native of Linn Creek, Missouri, and received his preliminary education from the University of Missouri. In 1963 he received his M.D. degree from the University of Missouri School of Medicine and he interned at St. Louis County Hospital in Clayton, Missouri. He served in the U.S. Air Force from 1964-1966. Dr. Farmer's address is 104 East Columbia in Magnolia, Arkansas. He is a general practitioner.

St. Francis County Medical Society announces that DR. FUN HUNG FONG is a new member. Dr. Fong was born in China and he attended Vanderbilt University. He received his M.D. degree from the University of Tennessee Medical Units in 1957 and he interned at Mid-State Baptist Hospital in Nashville, Tennessee. Dr. Fong is a general practitioner with his office address at 64 East Main Street, Hughes, Arkansas.

DR. ROBERT WILLIAM HOOD is a new member of Pulaski County Medical Society. He is a native of Russellville, Arkansas, and he attended Arkansas Technical College at Russellville before entering the University of Arkansas School of Medicine. He received his M.D. degree from the University of Arkansas School of Medicine in 1959 and served his internship at Portsmouth Naval Hospital in Portsmouth, Virginia. He served in the U.S. Navy from 1959-1964. Dr. Hood is a dermatologist and his address is 500 South University, Little Rock, Arkansas.

A new member of Faulkner County Medical Society is DR. JOSEPH HORNOR LYFORD. He was born at Helena, Arkansas, and he received his preliminary education from Hendrix College. He received his M.D. degree from the University of Arkansas School of Medicine in 1961 and interned at Hillcrest Medical Center in Tulsa, Oklahoma. He practiced at Morrilton, Arkansas from 1963-1964, and at Buena Vista, Colorado from 1964-1966. Dr. Lyford is a general practitioner and his office address is 919 Locust, Conway, Arkansas.

Arkansas County Medical Society announces that DR. JERRY D. MORGAN has been added to its roster of members. A native of Brinkley, Arkansas, he attended Arkansas State College at Jonesboro before entering the University of Arkansas School of Medicine. He received his M.D. degree from that school in 1965 and he interned at St. Vincents Infirmary in Little Rock. He has served three years in the U.S. Army. Dr. Morgan's office address is 509 South Main, Stuttgart, Arkansas. He is a general practitioner.

DR. MONTE CLYDE MILLIGAN has been added to the roster of members of the Pulaski

County Medical Society. He is a native of Manila, Arkansas, and he received his preliminary education from the University of Arkansas. He was graduated from the University of Tennessee College of Medicine in 1957 and interned at Tripler Army Hospital at Honolulu, Hawaii. Dr. Milligan's specialty is radiology and he is Associate Professor of Radiology at the University of Arkansas Medical Center, 4301 West Markham, Little Rock, Arkansas.

**DR. FORREST BERNIE MILLER, JR.** is a new member of Pulaski County Medical Society. He was born at Little Rock, Arkansas, and he attended Arkansas State Teacher's College at Conway, Arkansas. He was graduated from the University of Arkansas School of Medicine in 1964 and he interned at Arkansas Baptist Medical Center in Little Rock. Dr. Miller is a general practitioner and he is associated with The Family Clinic, 3500 South University, Little Rock, Arkansas.

A new member of Saline County Medical Society is DR. RONALD WILLIAM McNICHOL, a native of Russell, Manitoba, Canada. He received his preliminary education from the University of Manitoba, Winnipeg, Canada, and he received his M.D. degree from Manitoba Medical College in 1951. He interned at Winnipeg General Hospital, Winnipeg, Canada. He served in the Royal Canadian Air Force from 1940 until 1945. Dr. McNichol's specialty is psychiatry and he is associated with the Arkansas State Hospital, Benton, Arkansas.

Greene-Clay County Medical Society announces that DR. RICHARD O. MARTIN is a new member. He was born at Blytheville, Arkansas, and attended the University of Arkansas. He was graduated from the University of Arkansas School of Medicine in 1963 and he served his internship at St. Vincent Infirmary in Little Rock. He served in the U.S. Marine Corps, from 1953-1966. Dr. Martin is an anesthesiologist and his address is Community Hospital, Paragould, Arkansas.

**DR. JOHN IRVING MOOSE** has been added to the roster of members of the Benton County Medical Society. A native of Little Rock, he received his pre-med from Hendrix College, and obtained his M.D. degree from the University of

Arkansas School of Medicine in 1963. He interned at Arkansas Baptist Medical Center and served in the U.S. Air Force from 1964-1966. Dr. Moose's office address is 304 South Maxwell in Siloam Springs, Arkansas. He is a general practitioner.

A new member of White County Medical Society is DR. ELVIN LLOYD NORRIS, a native of Conway, Arkansas. He attended Hendrix College and College of William and Mary. He was graduated from the University of Arkansas School of Medicine in 1965 and interned at St. Vincent Infirmary in Little Rock. He served in the U.S. Navy from 1958-1961. Dr. Norris is a general practitioner and his address is 401 Center, Beebe, Arkansas.

Washington County Medical Society announces that DR. MONROE BORDERS PAINTER has been added to its membership roster. He was born at New Franklin, Missouri, and attended Central College in Fayette, Missouri. In 1959 he was graduated from the University of Missouri School of Medicine and he interned at Brooke General Hospital, San Antonio, Texas. He served in the U.S. Army from 1959-1966. Dr. Painter's specialty is internal medicine and his address is 675 Lollar Lane, Fayetteville, Arkansas.

**DR. CLYDE DODSON PAULK** is a new member of Grant County Medical Society. He is a native of Conway, Arkansas, and he received his pre-med from Hendrix College. He was graduated from the University of Arkansas School of Medicine in 1963 and he interned at Arkansas Baptist Medical Center at Little Rock. He served in the U.S. Navy from 1964-1966. Dr. Paultk is associated with Dr. Curtis B. Clark at 200 South Rose in Sheridan, Arkansas. He is a general practitioner.

A new member of Miller County Medical Society is DR. LARRY M. PEEBLES, a native of Fayetteville, Tennessee. He attended Harding College and received his M.D. degree from the University of Arkansas School of Medicine in 1965. He interned at the University of Arkansas Medical Center. Dr. Peebles is a general practitioner and his office address is 2304 New Boston Road in Texarkana, Arkansas.

**DR. JACK LEE ROYAL** is a new member of Hempstead County Medical Society. He was born at Earle, Arkansas, and attended Ouachita Baptist College before entering the University of Arkansas School of Medicine. He was graduated from that school in 1962 and he interned at Baptist Memorial Hospital, Memphis, Tennessee. He served in the U.S. Army from 1963-1966. His office address is 601 South Elm Street in Hope, Arkansas. He is a general practitioner.

Union County Medical Society announces that **DR. DOROTHY C. SAMPLE** has been added to its roster of members. She is a native of El Dorado, Arkansas, and she received her pre-med from Louisiana Polytechnic Institute and from the University of Houston. She obtained her M.D. degree from the University of Arkansas School of Medicine in 1962 and interned at the University of Arkansas Medical Center. Dr. Sample's specialty is dermatology and her address is 427 West Oak in El Dorado, Arkansas.

**DR. WANDA JEAN STEPHENS** is a new member of Pulaski County Medical Society. She is a native of Little Rock and attended Hendrix College and the University of Texas. She received her M.D. degree from the University of Arkansas School of Medicine in 1958 and interned at St. Vincent Infirmary in Little Rock. Dr. Stephens' specialty is psychiatry and her address is 1411 Lakewood House, North Little Rock, Arkansas.

A new member of Pulaski County Medical Society is **DR. FRANK MOORE SIPES**, a native of Little Rock, Arkansas. He received his pre-med from William Jewell College at Liberty, Missouri, and from Westminster College, Fulton, Missouri. In 1949 he received his M.D. degree from Northwestern University Medical School in Chicago, Illinois, and he interned at Kansas City General Hospital No. 1 in Kansas City, Missouri. Dr. Sipes' specialty is general surgery and his office is in the Donaghey Building, Little Rock, Arkansas.

Greene-Clay County Medical Society announces that **DR. LEONUS L. SHEDD** is a new member of that society. Born at Manila, Arkansas, he attended Oklahoma City University and the University of Mississippi. He received his M.D. de-

gree in 1965 from the University of Arkansas School of Medicine and interned at St. Vincent Infirmary in Little Rock. Dr. Shedd is a general practitioner and his office address is 901 West Kingshighway, Paragould, Arkansas.

**DR. CHARLES L. TUCKER** is a new member of Baxter County Medical Society. He is a native of Batesville, Arkansas, and received his preliminary education from Arkansas College and from the University of Arkansas. He was graduated from the University of Arkansas School of Medicine in 1965 and he interned at Arkansas Baptist Medical Center in Little Rock. Dr. Tucker's office address is Salem Clinic in Salem, Arkansas. He is a general practitioner.

A new member of Pulaski County Medical Society is **DR. WILLIAM IRL WADE, JR.**, a native of Mena, Arkansas. He attended the Little Rock University and received his M.D. degree from the University of Arkansas Medical School in 1963. He then interned at the U.S. Public Health and Charity Hospital in New Orleans, Louisiana. He served in the U.S. Public Health Service from 1964-1966. Dr. Wade's address is 814 North University, Little Rock, Arkansas, and he is a general practitioner.

**DR. CARROLL FRANKLIN SHUKERS, II** is a new member of Garland County Medical Society. He is a native of Baltimore, Maryland, and he was graduated from the University of Arkansas School of Medicine in 1958. He interned at St. Vincent Infirmary in Little Rock and he served in the U.S. Navy from 1946-1950. Dr. Shukers is a general practitioner-at Mount Ida, Arkansas.

Sebastian County Medical Society announces that **DR. HOMER GLEN ELLIS** is a new member. He was born at Mobile, Alabama, and attended Tulane University. He was graduated from Tulane University Medical School in 1955 and interned at Charity Hospital, New Orleans, Louisiana. He served in the U.S. Navy from 1944-1946. Dr. Ellis practiced at Crystal Springs, Mississippi from 1956-1958 and at Centreville, Mississippi from 1958-1963. He is associated with Dr. Arthur Hoge, Jr., in the practice of obstetrics-gynecology at 314 North Greenwood, Fort Smith, Arkansas.

A new member of Garland County Medical Society is DR. JOE WARREN CHAMBERLAIN, native of Hot Springs, Arkansas. He received his pre-med from the University of Arkansas and he was graduated from Tulane University School of Medicine in 1960. He interned at Charity Hospital of New Orleans, New Orleans, Louisiana. Dr. Chamberlain's specialty is general surgery and his address is 330 Sixth Street, Hot Springs, Arkansas.

DR. DENO PETER PAPPAS is a new member of Garland County Medical Society. He was born at Hot Springs and attended the University of Arkansas and the University of Arkansas School of Medicine. He was graduated from the University of Arkansas School of Medicine in 1959 and served his internship at the University of Arkansas Medical Center. He served in the U.S. Navy from 1961-1963. Dr. Pappas' office address is 101 Whittington Avenue, Hot Springs, Arkansas. He is a general practitioner.



The following county medical society auxiliaries observed Doctors' Day in the following manner:

#### **Phillips County**

Members of the Phillips County Auxiliary entertained their husbands with a dinner party at the home of Dr. and Mrs. Pat McCarty in Helena.

#### **Johnson County**

Johnson County Auxiliary honored the doctors of the county with a dinner at the Clarksville Country Club.

#### **Pulaski County**

Pulaski County Auxiliary sponsored a program to urge the doctors to undergo physical exams.

#### **Pope-Yell County**

Members of Pope-Yell Auxiliary honored their husbands with a dinner at the home of Dr. and Mrs. W. E. King of Russellville.

#### **Arkansas County**

Doctors of Arkansas County were honored with a dinner party at DeWitt.

#### **Washington County**

A dinner was given Washington County doctors at the home of Dr. and Mrs. Ed Wheat of Springdale. A Western theme was carried out at the dinner.

#### **Garland County**

A luncheon was held honoring the doctors and the charter members of the county medical auxiliary.

#### **Auxiliary Entertains State Officers**

Clark County Medical Auxiliary entertained the State Auxiliary President and President-Elect, Mrs. John McC. Smith and Mrs. Art B. Martin at Arkadelphia. Mrs. L. G. Walker is president of Clark County Auxiliary.



#### **Behavior of Human Lung Cancers in Short-Term Tissue Cultures**

R. P. Sherwin, V. Richters, and A. Richters (Univ. of Southern California, Los Angeles) *Cancer* 20:1-22 (Jan) 1967

Forty-six human lung cancers were studied in vitro by phase microscopy, cinemicrography, and cytological staining of monolayers. The in vitro findings were correlated with histological examinations of whole lung sections and cancer tissue explants sacrificed at specific intervals. The in vitro study was restricted to short term cultures to provide an optimal reflection of in vivo cancer properties. Eight distinctive types of in vitro cancer behavior were found, cellular interactions described, and new cytostructural insights gained. Also, in vitro parameters of potential clinical value are suggested, particularly in view of the high yield of lung cancer cells obtainable in short-term cultures.

# PHYSICIANS' DIRECTORY

OFFICE PHONE  
FR 2-5518 or  
FR 2-6789

HOME PHONE  
MO 3-3896 or  
FR 2-6789

HOYT R. ALLEN, M.D., F.A.P.S., F.I.C.S.  
American Board of Surgery in Proctology  
COLON AND RECTAL SURGERY

SUITE 826 DONAGHEY BLDG.

LITTLE ROCK, ARKANSAS

T. DUEL BROWN, M.D., F.A.C.S.

American Board of Urology

516 BAPTIST MEDICAL ARTS BLDG.

LITTLE ROCK, ARKANSAS

PHONE FRanklin 5-3376

ALAN G. CAZORT, M.D.  
BILL F. HEFLY, M.D.

PURCELL SMITH, JR., M.D.  
FRED KITTLER, M.D.

ARKANSAS ALLERGY CLINIC  
DIAGNOSIS AND TREATMENT OF ALLERGIC DISEASES

4001 WEST CAPITOL

Phone MO 4-1596

LITTLE ROCK, ARKANSAS

JOHN LAURENS, M.D., M.S., F.A.C.S.

DIPLOMATE AMERICAN BOARD OF COLON AND RECTAL SURGERY  
PRACTICE LIMITED TO ANORECTAL SURGERY

501 North University

Phone MO 4-0390

Little Rock, Arkansas

WILBURN M. HAMILTON, M.D., F.A.C.P.

Diplomate American Board of Internal Medicine

1002 DONAGHEY BUILDING

LITTLE ROCK, ARKANSAS

ROBERT W. ROSS, M.D.

J. TRAVIS CREWS, M.D.

DRS. ROSS AND CREWS  
OBSTETRICS & GYNECOLOGY

4316 WEST MARKHAM

LITTLE ROCK, ARKANSAS

DR. SAM J. KUYKENDALL, M.D., F.A.C.S., M.Sc. (Surgery)

American Board of Surgery  
SPECIALIZING IN THORACIC AND CARDIOVASCULAR SURGERY

SUITE 700, DOCTORS BLDG.

500 S. UNIVERSITY AVE.

Phone MO 4-2736

LITTLE ROCK, ARKANSAS

WILLIAM N. JONES, M.D.

DISEASES OF THE SKIN

Diplomate American Board of Dermatology

SUITE 708, DOCTORS BUILDING

500 SOUTH UNIVERSITY AVENUE

LITTLE ROCK, ARKANSAS

TELEPHONE: MO 4-0418

DALE ALFORD, M.D., F.A.C.S., F.I.C.S.\*  
BILLY M. CHANDLER, B.S., M.D.

MARY V. WACKERHAGEN, B.A.,  
Certified Orthoptic Technician  
MARY S. PARKER,  
Graduate Medical Secretary-Technician

ALFORD EYE CLINIC

\*Diplomate American Board of Ophthalmology  
115 East Capitol Avenue

Little Rock, Arkansas

August, 1967

# THE JOURNAL OF THE Arkansas MEDICAL SOCIETY

Vol. 64 No. 3

FORT SMITH, ARKANSAS

Medical School Library  
University of California  
San Francisco, California

94122

C. MEDICAL CENTER LIBRARY

AUG 29 1967

San Francisco 94122



Among the adjuncts to the physician's skill

## Darvon® Compound-65

Each Pulvule® contains 65 mg. propoxyphene hydrochloride, 227 mg. aspirin, 162 mg. phenacetin, and 32.4 mg. caffeine.



Additional information available to the medical profession upon request.  
ELI LILLY AND COMPANY, INDIANAPOLIS, INDIANA 46206  
701133

**some allergens are green**

**whatever their color,  
shape, or size...**

**Benadryl®**  
(diphenhydramine hydrochloride)  
PARKE-DAVIS

**for control of  
allergic symptoms**



Whether the allergen is greenish or garish, unseen or unknown, your patient can get symptomatic relief with BENADRYL—the potent antihistamine with antispasmodic action. *INDICATIONS:* Antihistaminic, anti-spasmodic, antitussive, and antiemetic therapy.

*PRECAUTIONS:* Persons who have become drowsy on this or other antihistamine-containing drugs, or whose tolerance is not known, should not drive vehicles or engage in other activities requiring keen response while using this product. Hypnotics, sedatives, or tranquilizers if used with diphenhydramine hydrochloride should be prescribed with caution because of possible additive effect. Diphenhydramine

has an atropine-like action which should be considered when prescribing diphenhydramine hydrochloride. *ADVERSE REACTIONS:* Side effects are generally mild and may affect the nervous, gastrointestinal, and cardiovascular systems. Drowsiness, dizziness, dryness of the mouth, nausea, nervousness, palpitation, blurring of vision, vertigo, headache, muscular aching, thickening of bronchial secretions, restlessness, and insomnia have been reported. Allergic reactions may occur.

BENADRYL is available in Kapsseals® of 50 mg. and Capsules of 25 mg.

00867

The pink capsule with the white band is a trademark of Parke, Davis & Company.

**PARKE-DAVIS**

# Lutrexin®

**HW&D BRAND OF LUTUTRIN**

**3000 UNIT TABLETS**

**IN THE TREATMENT OF FUNCTIONAL DYSMENORRHEA  
AND SELECTED CASES OF PREMATURE LABOR AND 2ND  
AND 3RD TRIMESTER THREATENED ABORTION**

In controlling abnormal uterine activity, LUTREXIN, the non-steroid "uterine relaxing factor" has been found to be the drug of choice by many clinicians.

No side effects have been reported, even when massive doses (25 tablets per day) were administered.

Literature on indications and dosage available on request.

Supplied in bottles of twenty-five 3,000 unit tablets.

**HYNSON, WESTCOTT & DUNNING, INC.**

BALTIMORE, MARYLAND 21201

(LTR22)



In vivo measurement of LUTREXIN (Lututrin) on contracting uterine muscle of the guinea pig.

**THE  
JOURNAL OF THE  
Arkansas  
MEDICAL SOCIETY**

Owned by

**THE ARKANSAS MEDICAL SOCIETY**  
**And Published Under Direction of the Council**

**ALFRED KAHN, JR., M.D., Editor**  
**1300 West Sixth Street Little Rock, Arkansas**

**MR. PAUL C. SCHAEFER, Business Manager**  
**218 Kelley Bldg. Fort Smith, Arkansas**

**LITTLE ROCK BUSINESS OFFICE**  
**114 E. Second St. Little Rock, Arkansas**

OFFICERS OF THE ARKANSAS MEDICAL SOCIETY  
 JOSEPH A. NORTON, President ..... Little Rock  
 H. W. THOMAS, President-Elect ..... Dermott  
 JEROME LEVY, First Vice President ..... Little Rock  
 DAVID H. PONTIUS, Second Vice President ..... West Memphis  
 GEORGE F. WYNNE, Third Vice President ..... Warren  
 ELVIN SHUFFIELD, Secretary ..... Little Rock  
 W. R. BROOKSHER, Secretary Emeritus ..... Fort Smith  
 BEN N. SALTZMAN, Treasurer ..... Mountain Home  
 JOHN P. PRICE, Speaker, House of Delegates ..... Monticello  
 AMAIL CHUDY, Vice Speaker,  
     House of Delegates ..... North Little Rock  
 ALFRED KAHN, JR., Journal Editor ..... Little Rock  
 JAMES M. KOLB, SR., Delegate to AMA ..... Clarksville  
 JACK KENNEDY, Delegate to AMA ..... Arkadelphia  
 C. C. LONG, Alternate Delegate to AMA ..... Ozark  
 ALFRED KAHN, JR., Alternate Delegate to AMA ..... Little Rock  
 MR. PAUL C. SCHAEFER, Executive Vice President,  
     P.O. Box 1208 ..... Fort Smith

COUNCILORS	
First District	ELDON FAIRLEY ..... Osceola
	B. P. RANEY ..... Jonesboro
Second District	PAUL GRAY ..... Batesville
	HUGH R. EDWARDS ..... Searcy
Third District	PAUL MILLAR ..... Stuttgart
	L. J. P. BELL ..... Helena
Fourth District	T. F. TOWNSEND ..... Pine Bluff
	LFE B. PARKER ..... McGehee
Fifth District	KENNETH R. DUZAN ..... El Dorado
	PAUL SIZEMORE ..... Magnolia
Sixth District	KARLTON H. KEMP ..... Texarkana
	JOHN P. WOOD ..... Mena
Seventh District	JACK KENNEDY ..... Arkadelphia
	ROBERT F. McCRARY ..... Hot Springs
Eighth District	WILLIAM PAYTON KOLB ..... Little Rock
	JAMES R. MORRISON ..... Little Rock
Ninth District	STANLEY APPLEGATE ..... Springdale
	ROSS FOWLER ..... Harrison
Tenth District	C. C. LONG ..... Ozark
	A. S. KOENIG ..... Fort Smith

The Advertising policy of this JOURNAL is governed by the PRINCIPLES OF ADVERTISING of the State Medical Journal Advertising Bureau, Inc., by the Advertising Committee of the Bureau and by the Council of the Arkansas Medical Society.

*EXCLUSIVE PUBLICATION—Articles are accepted for publication on the condition that they are contributed solely to this JOURNAL.*

*COPYRIGHT 1967 — By the JOURNAL of the Arkansas Medical Society.*

*NEWS—Our readers are requested to send in items of news, also marked copies of newspapers containing matter of interest to the membership.*

## SCIENTIFIC ARTICLES

A One-Stage Operation for  
Non-Advanced Cancer of the  
Lower Lip ..... 103  
*J. K. Donaldson, M.D.*

The Mass in the Neck ..... 107  
*Roger Boles, M.D.*

Saddle Block ..... 112  
*R. B. Clark, M.D.*  
*and F. E. Greifenstein, M.D.*

Report of Short Tour in Vinh Binh ..... 113  
*John M. Grasse, Jr., M.D.*

## FORUM FROM THE DEPT. OF OBGYN

Postpartum Hematoma ..... 115  
*James C. Romine, M.D.*

## WHAT'S NEW IN MEDICINE?

Continuing Education for  
Post-Graduates ..... 119

## FEATURES

Electrocardiogram of the Month ..... 128  
 What Is Your Diagnosis? ..... 129  
 Arkansas Public Health at a Glance ..... 130  
 Editorial ..... 131  
 Resolutions ..... 132  
 Medicine in the News ..... 133  
 Women's Auxiliary ..... 137  
 Book Review ..... 139

# THE JOURNAL OF THE Arkansas MEDICAL SOCIETY

PUBLISHED MONTHLY UNDER DIRECTION OF COUNCIL

VOLUME 64 • AUGUST, 1967 • NUMBER 3

## A One Stage Operation for Non-Advanced Cancer of the Lower Lip\*

J. K. Donaldson, M.D.\*\*

The author reviewed recently an abstract in *Modern Medicine*<sup>1</sup> of an excellent article which Andrews originally presented<sup>2</sup> regarding usage of a Hagedorn rectangular flap for repair of lower-lip defects, with special reference to carcinoma of the lower lip; and the article stimulated the author to present below an operation for cancer of the lower lip which procedure he developed when he was Chief of Surgical Services at Barnes General U. S. Army Hospital in 1943 and 1944, during World War II. The operation can be used for leukoplakia or some other lesions.

Most physicians know the undesirable narrowing and deformity of the lower lip which occurs after the frequently used V-shaped excision of a cancer of the lower lip. Too, it is generally known that essentially a similar amount of narrowing and deformity caused by the V-shaped excision occur from curative radiologic treatment of even non-advanced cancer of the lower lip.

Most surgeons are familiar with the principles of various surgical transplantations or manipulations of flaps which have been used for many years, at times, in repair of defects of lower lip after surgical excision of cancer.

Andrews' procedure mentioned above seemed

The author would have preferred to have exact citations regarding those cases he operated upon in World War II, together with photographs. The pressure upon him and his staff was so great, however, that at the time he gave no thought to future publication regarding the procedure he developed. The records of the cases he operated on in the Army are undoubtedly present somewhere in the military files; but the author has made no effort to find them since finding them would not further his objective.

His objective is simply to present the fundamentals of this procedure and leave final judgment regarding it to other surgeons.

Andrews presented five cases in his series (1), (2), part of which were for leukoplakia. The author, to the best of his remembrance operated upon four to six cases in the Army.

The Author operated upon only one case after he left the Service. The patient was an elderly man and we obtained excellent cosmetic results. The case is on record in one of our larger local hospitals; but unfortunately photographs which were taken were lost.

\*From the Donaldson Clinic and Hospital, 101 West 24th, Little Rock, Arkansas.

\*\*Honorary Associate Professor of Surgery, University of Arkansas School of Medicine.

to the author to be an improvement cosmetically over all other previously published surgical procedures with which the author is familiar. Nevertheless the author believes the cosmetic results of the operation he presents below are superior to those of the Andrews procedure.

The operation presented here accomplishes two important cosmetic objectives.

1. It eliminates entirely any narrowing of the lip.

2. It places incisions, suture lines, and scars in more cosmetically-desirable positions than does the Andrews or any other previously described operation for cancer of the lower lip, to the best of the author's knowledge.

The history regarding the author's development of the operation described might be of some slight practical value.

During the time the author was serving as Chief of Surgical Services at U. S. Army Barnes General Hospital in 1943 and 1944, on the western coast in Vancouver, Washington just across the Columbia River from Portland, Oregon, a large contingent of troops who had been training for a considerable length of time in very hot desert or desert-like areas in Texas and/or Southern California were sent into that northwestern area of the continental United States which Barnes served, for potential staging for service in a combat area.

A few of these men came to the author's attention with lesions of the lower lip which were proved histologically to be squamous cell carcinomas.

All the men with the cancers were young; and the lesions seemed definitely to be actinic in origin.

The young age of the soldiers involved caused the author serious concern when he considered the deformity which they would carry through life if conventional treatment, either surgical or radiologic, were used.

The author had had a fairly extensive experience with flapping procedure in thoracic<sup>4</sup> and other surgery; and after some thought he evolved the operation described below.

He performed the procedure in two stages on the first patient and was so pleased with the results and fundamental technique of the operation he decided that in the future he would complete the procedure in one stage. At this point the author feels obligated to make some additional remarks regarding the presentation as in the footnote below.

### THE OPERATIVE PROCEDURE

**GENERAL CONSIDERATIONS:** The face has, of course, a copious blood supply. Therefore a relatively small pedicle will supply the flap discussed below.

In effecting the procedure it is best to place as little suture or ligature-material as feasible into the incisional surfaces. Pressure may be used to control most bleeding until sutures for closing the operative wound are to be placed. When it is necessary to use clamps or ligatures one should avoid unnecessary crushing of tissue.

Nerve block and local anesthesia may be used though the author prefers general anesthesia since any local infiltration may distort to an extent the incisional operative field.

The author agrees with Andrews that if a patient wears dentures the repair should be done, if feasible, with at least the lower denture in.

Most of the final semilunar suture line ABC, FIG. III lies in the "shadow" of the normally protruding portion of the lower lip and is partially in line with Langer's lines of tension.

The final lower suture line, CDE, FIG. III, lies in the normal creases or folds as I, a continuation downward on the chin, of the naso-labial fold or sulcus and/or, J, a normal crease downward from the labial commissure or "corner" of the mouth. This location contributes greatly to obscurity of scar.

Under different circumstances the Author would probably have waited further before presenting this article hoping for additional patients to furnish a larger series.

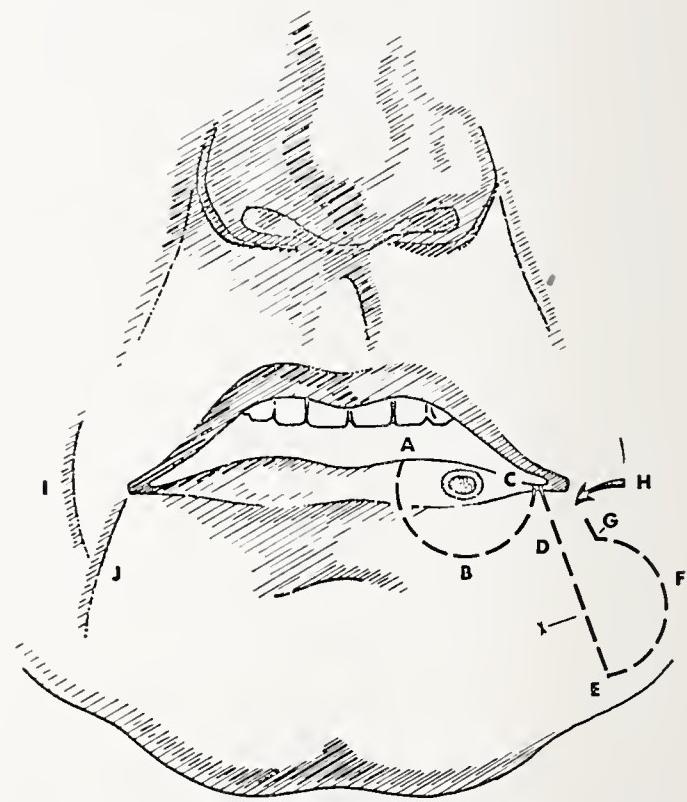
However, cancer of the lip is actually a rather rare lesion; and this combined with the fact that the author has a service-disability which makes his future years uncertain caused him to proceed with the article. He considered it his duty to present this procedure in the literature, and he offered this presentation firstly to the Journal hoping thereby to reach the greater number of his colleagues in his home State.

It is noteworthy that the flap DEF, FIGS. I and II, is taken from an area where there is considerably more redundancy of tissue than is present in the lower lip. One has but to look in a mirror as he adjusts with his fingers the flesh of his face at the site of the proposed flap, to appreciate the abundant laxity of tissue in the area.

**TECHNIQUE:** Those cases on which the author has operated have all presented a lesion to one side of the midline. Such location is the usual one.<sup>3</sup> If the lesions should be in the exact center of the lip one may adjust the operation to such location (see COMMENTS).

One cannot completely sterilize the mouth, of course; but one should operate as nearly as possible in a sterile field. Suitable mouth wash as aqueous solution of Zephiran, scrub and prep of choice on the outside, and regular aseptic technique in the operating room, should be used.

Suitable dye markings or small nicks by scalpel may be used to outline incisions and flaps to be made.



LEGEND FOR FIGURE 1

The pedicle H in the illustration need not be quite as long as shown, in some cases with a laterally situated lesion. It may need to be a bit longer than illustrated for a lesion in the midline. See The Operative Procedure and Comments in text.

No absolute rule can be laid down regarding the length of the incision along line D to E. The length of the incision needs to be sufficient to permit the flap to reach its desired site but not excessively lengthy. It usually needs to be just a bit longer than the transverse measurement from A to C.

When one remembers that the measurement of the average adult mouth in repose from commissure to commissure is 5 to 5½ cm. one can understand that a flap as explained in the text can reach the midline region without undue difficulty.

The experienced surgeon in the field with which this operative procedure is concerned should have no undue difficulty in judging the dimensions and sites of his incisions.

The semilunar incision (ABC, and AB, FIGS. I AND II) is made boldly through the full thickness of the lip circumventing and excising the lesion at least one centimeter to one-half inch from its periphery.

The next step of the procedure is to incise boldly through the full thickness of the lip from C downward and slightly lateralward from D to E, FIG. I. This incision is made somewhat obliquely mesialward on the posterior aspect of it, in such a manner as to obtain a flap of mucous membrane a few millimeters in breadth, which flap is used to recreate vermillion border over raw surface along K, FIG. II, of the flap, when the mucous membrane, M, FIG. III, is finally brought forward and sutured along Line L, FIG. III.

Next, after incision DE has been completed, FIG. I, incision is continued full thickness in such manner as to create the flap DEFG which will be rotated, FIG. II, and will fit almost exactly into the defect which has been created by excision along ABC, FIG. I. If incision were continued from G to point D, FIG. I, DEFG would be the *exact* dimension of the defect AB, FIG. II. It is necessary, however, to leave the pedicle, H, for blood supply to the flap DEFG.

The breadth of pedicle H as illustrated is one-

third that of the maximum breadth of DEF from F to point X, FIG. I. This one-third proportion of the pedicle is considered adequate because of the profuse blood supply of the face. However, one should not hesitate to make the pedicle H a bit wider if it seems indicated. The pedicle, the author believes, could be one-half the maximum breadth of the flap from F to point X without distorting the end result of the operation. This is true because pedicle H, when rotated, FIG. II, and in final position, FIG. III depresses downward the tissue at point C, FIGS. I, III, which is not an undesirable sequence. The tissues at point C are very mobile especially after the incision along DE, FIG. I, has been made; and since the incision along EFG, FIG. I, is semilunar in contrast to the straight incision along DE, FIG. I, it is well to have some redundant tissue along D and E as created by some depression downward at point C, the redundancy to be drawn into the concavity, so to speak, of EFG, FIG. I.

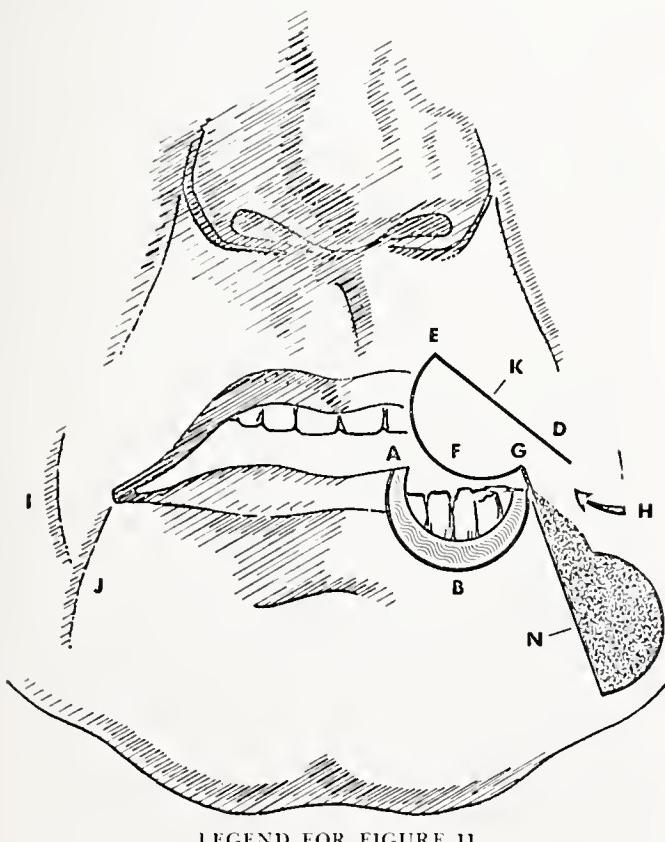
FIGURE III illustrates the flap DEF having been rotated and fitted into the defect AB of FIG. II.

Note that in FIGURE I a small incision parallel to line CE has been illustrated extending from point G. This slight extension of the incision from G may be used if necessary to facilitate smooth rotation of the flap.

After rotation of the flap into the defect one determines that the mucous membrane on the posterior aspect of the flap may be brought forward over the raw surface of the superior aspect, K, FIG. II, of the flap along M and J, FIG. III, sufficiently to form a suitable vermillion border. One may loosen the mucous membrane a bit more if necessary, though suturing of the mucous membrane is not done until later.

One now begins the final adjustment and the closing sutures. One may take a few interrupted stitches in musculature as preliminary adjustment and trial sutures, before final closure is done. Then suture material of choice is used to attach the flap EFG into AB, FIG. II, musculature to musculature (possibly a mild Chromic 00), by interrupted stitches.

Secondly, one may take two or three adjustment sutures in musculature to start closure of the defect N, FIG. II, from which the flap has been rotated. One works this closure above downward, shifting any redundancy present (and one may find none present) to the inferior aspect and tailoring it



The flap DEF is full thickness but is shown in simple diagrammatic form for instructional clarity.

there as indicated.

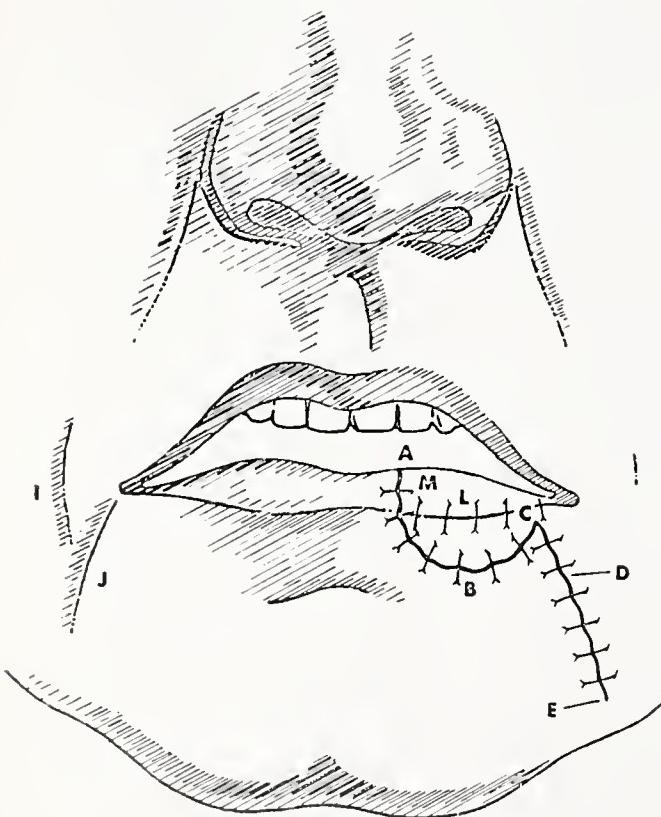
After the adjustment, take the necessary number of interrupted sutures to close the mucous membrane on the posterior aspects of the defect, using possibly plain 00 catgut. Then final closure of the musculature of the defect is made. Actually the author has usually closed the musculature of this area and the mucous membrane simultaneously with interrupted chromic 00 through musculature and mucous membrane.

Skin is then closed as along DE, FIG. III.

Next, the mucous membrane M is advanced from the posterior superior aspect of the transplanted flap to form the vermillion border and sutured along L, FIG. III. Interrupted "non-irritating" sutures as silk, or suitable plastic material are used in attaching mucous membrane to skin.

Finally, one takes interrupted sutures as plain 00 to 000 as indicated, to approximate as best possible without appreciable tension, the borders of the mucous membrane on the posterior aspects of the transplanted-flap region.

No dressing, no drains.



LEGEND FOR FIGURE III

See The Operative Procedure in text for details regarding all FIGURES.

## COMMENTS

Should the lesion be in the midline, which is unusual, one may do one of two things, choosing the modification which would seem to fit in best in the particular case:

1. Start the A part of incision ABC, FIG. I, one centimeter to one-half inch laterally to the lesion and then sweep the incision ABC to within approximately 2 or 3 mm. of a commissure ("corner") of the mouth and proceed to create a suitable flap in accordance with the principles of technique described above.

2. In some cases one might wish to terminate the C of the ABC, FIG. I, incision, a bit more mesially and, angle the first part of his incision from C obliquely to join line DE, at about D, then proceed downward to E, et cetera. The pedicle H of his flap thereby would be placed more mesially and be not quite so lengthy.

## SUMMARY

A one stage operative procedure for non-advanced carcinoma of the lower lip is presented. The operation can be used for leukoplakia and some other lesions.

The author believes the operation obtains better cosmetic end results than radiologic therapy or other operative procedures with which he is familiar.

The series reported is small; but the author believed it should be recorded in order that other surgeons might make final judgment regarding the operation.

## REFERENCES

1. Andrews, Edmund B.: Rectangular flap in lower lip defects. Review of Modern Medicine January through June, P. 417, 1965. Modern Medicine, Minneapolis, Minnesota.
2. Andrews, Edmund B.: Repair of lower lip defects by the Hagedorn rectangular flap method. Plast. Reconstr. Surg. 34:27-33, 1964.
3. Boyle, Paul E. and Gorlin, Robert J. (writing for W. A. D. Anderson) Fourth Edition of Pathology, P. 753, 1961, Mosby, St. Louis, Missouri.
4. Donaldson, J. K.: Surgical Disorders of the Chest, 2nd Edition, pp. 34, 35, 290, 1947, Lea and Febiger, Philadelphia, Pa.

# THE MASS IN THE NECK

Roger Boles, M.D.\*

**M**asses in the neck present varied and challenging problems in diagnosis and treatment. If not diagnosed accurately and if not treated properly, many of the causes of masses in the neck may result in prolonged disability or disfiguring scars and recurrences, to say nothing of loss of life from those due to underlying malignancies.

A very careful, studied approach should be taken to every mass in the neck, lest one in his haste overlook important alternate diagnoses and inadvertently apply the wrong treatment. Certainly, the long-standing tendency to proceed immediately with surgical biopsy of all masses in the neck, before exhaustive medical evaluation has taken place, must be curbed. Such inappropriate biopsies can greatly diminish the chances for curing many of the malignancies of the neck, and in cases of certain congenital lesions, can cause prolonged and disfiguring disability.

A good working classification into which most neck masses can be categorized can be based on etiologies:

1. Inflammatory
2. Developmental
3. Neoplastic
4. Thyroid gland
5. Major salivary glands
6. Constitutional
7. Trauma

Neck masses can often be further categorized by their location in the anatomical triangles of the neck. Different types of neck masses also frequently occur in certain age groups and this helps in further distinguishing them. These above categorical features, combined with a careful history of the onset, progression and associated symptoms, plus detailed head and neck examination in addition to the general physical examination, should leave little doubt as to the nature of the neck mass in most cases. Confirmation of this initial diagnosis, or more detailed information relating to the diagnosis, may be further obtained from laboratory and x-ray studies and other special diagnostic techniques. In general, biopsy of neck masses should be reserved for those cases in which a diagnosis cannot be made by a combination of the more conservative methods above,

nor by identification and biopsy of the primary mucus membrane or other lesion in the cases of metastatic neoplasm of the neck.

## I. Inflammatory masses of the neck

### A. Inflammatory cervical lymph nodes:

These are probably the most common neck masses seen in children. They are usually preceded by an upper respiratory infection or tonsillitis. Intensive antibiotic therapy is usually successful in treating such nodes. If the nodes break down and suppurate, however, they must be surgically incised and drained. Specific chronic granulomata of the cervical lymph nodes, such as tuberculosis, are quite rare today. Treatment of these is by specific medical therapy with surgical excision for persistent disease.

### B. Deep fascial space infections:

Those which classically present as external neck swellings are:

- 1) parapharyngeal space abscess
- 2) Ludwig's Angina (floor of the mouth abscess)
- 3) massticator space abscess
- 4) subperiosteal abscess of mandible
- 5) submandibular triangle abscess

Fortunately these infections have become quite rare with the advent of antibiotic therapy. However, when they persist, despite antibiotic therapy, they must be thoroughly drained surgically. This drainage is almost always best and most safely done through a lateral skin incision in the neck, rather than through the mucus membrane internally. More than one fascial space may be involved and each must be entered and drained. These are most commonly caused by antecedent dental or tonsil infections but may also follow stab wounds or injections of local anesthetics through the mucus membrane of the mouth and throat. These fascial space infections may encroach upon the airway enough to necessitate a tracheostomy, especially if a general anesthetic is to be delivered for incision and drainage.

### C. Actinomycosis:

This is caused by the organism actinomyces bovis, the organism usually invading the soft

\*From the Department of Otorhinolaryngology, The University of Michigan, Ann Arbor, Michigan.



Figure I  
"Modified—Blair Incision for Parotid Tumors."

tissues of the neck through a dental operative site. Fistulae and draining sinuses may occur. Treatment includes long-term use of penicillin and surgical drainage of the abscess.

## II. Developmental

### A. Branchial cleft cysts, sinuses and fistulae:

These are due to embryonic epithelial remnants of the fetal branchial cleft apparatus which failed to regress during intrauterine development. They may remain dormant in the soft tissues of the neck for many years following birth, only to enlarge and become filled with cystic fluid in later childhood or even into adulthood. They may become infected and even present as large infected masses of the side of the neck. They all, potentially, may have communicating epithelial tracts connecting inward to the pharynx and/or connecting outward to the skin of the lateral neck. They characteristically appear along the anterior border of the sternomastoid muscle and their external fistulae may drain along this line.

The first cleft defects are usually high in the neck in close association with the external auditory canal and the facial nerve. Great care must be taken not to injure the facial nerve during excision of these first cleft cysts and fistulae. The treatment for branchial cleft defects is surgical excision, being careful to excise all of the cyst and any epithelial tracts communicating inward with the pharyngeal mucosa or outward with the skin along the anterior border of the sterno-mastoid muscle. If the cyst is infected when first seen, the infection should be cleared as completely as possible with antibiotics before excision is attempted.

### B. Lymphangiomas and hemangiomas:

These are generally considered to be congenital ectasias of the cervical lymphatics vessels, rather than true neoplasms as their names imply. They are some of the most common masses appearing in the head and neck of children. These have no characteristic location. They are typically soft, multiloculated cystic masses. Lymphangiomas will usually transilluminate well. These lesions frequently disappear spontaneously in later childhood. They also tend to be very difficult to excise completely, the excision often endangering the facial or other cranial nerves and frequently leaving a considerable surgical defect, to say nothing of frequent recurrences. These lesions are probably best managed in most young children by a conservative watchful waiting approach. If spontaneous regression does not occur by six or seven years of age, or if, indeed, the lesions enlarge greatly or encroach

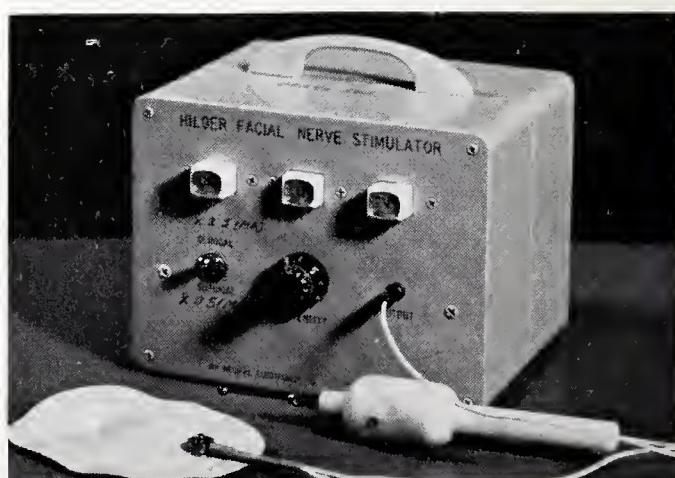


Figure 2  
"Nerve Stimulator for Percutaneous Electrical Excitability Testing."

significantly upon the upper airway, surgical intervention may become necessary.

**C. Thyroglossal duct cysts:**

These are characteristically anterior midline masses of the neck. They represent embryonic rests of the thyroglossal duct epithelium which failed to obliterate during fetal descent of the thyroid anlage from the base of the tongue, and may occur anywhere from the foramen cecum at the base of the tongue down to the isthmus of the thyroid gland. They may appear at any age, but usually in children and young adults. They may become infected and break down as a persistently draining fistula in the midline of the neck. Treatment is surgical excision after all associated infection is well-controlled with antibiotics. All attached tracts of the thyroglossal duct epithelium in an upward and downward direction must be completely excised to prevent recurrences. This has lead to the surgical principle of always removing the body of the hyoid bone along with the cyst and tract, since the epithelial tracts are intimately associated with this part of the hyoid, and failure to remove the body of the hyoid leads to a high rate of recurrences. Rarely, thyroid gland descent and development has been incomplete, and all of the patient's functioning thyroid tissue is involved in the thyroglossal duct defect. Care must be taken to determine this pre-operatively by physical examination and by  $I^{131}$  scanning of the functional thyroid tissue. Further confirmation should be made by the surgeon on exploration of the neck. The patient should be left with adequate functional thyroid tissue, even if it is in abnormal position.

**D. Dermoid cysts and teratomas:**

These are embryonic nests of undifferentiated epithelial and mesenchymal tissues. They may occur anywhere in the neck, but the dermoid cyst characteristically occurs in the midline and may contain teeth and hair. Teratomas tend to be firm and solid but may have areas of cystic degeneration. Treatment is surgical excision.

### III. Neoplastic

**A. Benign:**

- 1) Lipomas
- 2) Neuromas

3) Myomas

4) Carotid body tumors

These benign tumors may stimulate other types of masses in the neck and must be distinguished from them. They all have rather rare malignant counterparts. Surgical excision is often necessary to make sure the tumor is not a malignant one and also if it is large and encroaching upon the upper air and food passages. Carotid body tumors are exceedingly hazardous to operate upon because of their vascularity and close association with the carotid bifurcation and the internal carotid artery. They have a characteristic location and should be suspected when a mass appears in the region of the carotid bifurcation which is not explainable by any other cause. Carotid angiography will usually outline these tumors very well. The surgeon must be prepared to repair or replace the carotid artery when attempting to excise a carotid body tumor and the patient should be prepared for a possible hemiplegia.

**B. Malignant:**

Most malignant masses in the neck are carcinoma metastatic to cervical lymph nodes. In fact, metastatic carcinoma in a lymph node is probably the most common cause of a mass in the neck in adults over 40. These metastases may be from anywhere in the body, but the vast majority are from primary neoplasms in the head and neck. Finding the primary lesion, of course, is extremely important and not infrequently requires an exhaustive search using a variety of diagnostic techniques. It is now a well-established principle that a mass in the neck, especially if it is suspected as being metastatic neoplasm, should not be biopsied until after an exhaustive search for the primary lesion has been made. The primary lesion can usually be found by careful examination, and it is this lesion which should be biopsied, not the metastasis. Biopsy of a metastasis in the neck interrupts the surgical anatomy and the lymphatics of the neck and spills cancer cells into the surrounding soft tissues, jeopardizing the chances for subsequently curing the patient of his tumor by en bloc surgical excision. Furthermore, the histological picture of the metastasis

usually doesn't help much in localizing the primary lesion, and a search for and biopsy of the primary lesion must still be carried out. Fortunately, most areas of the head and neck are quite accessible to examination, both directly by inspection and palpation, and indirectly by mirror examination of the nasopharynx and hypopharynx and larynx. So-called "silent" primary lesions (those which are asymptomatic except for their metastases in the neck) frequently lurk in the mucosal recesses of the nasopharynx and hypopharynx and may be quite small. Small melanomas of the scalp are also easily overlooked primary lesions. If the primary lesion cannot be found in the head and neck, then the search should be extended to the more distant and less likely areas, namely, the lungs and bronchi, the esophagus and upper gastro-intestinal tract, and finally, the lower intestinal tract and genito-urinary system. All of these areas are examinable both radiographically and endoscopically. Treatment of metastatic neoplasm in the neck will depend upon its types and extent and especially upon the location of the primary lesion. In most cases, the metastasis and the primary lesion are best treated in continuity, either by irradiation therapy or radical en bloc surgical excision, or by a combination of both. Sarcomas of the neck are rare and require wide surgical excision, since they are usually not very radiosensitive.

#### IV. Thyroid Gland

The thyroid gland is included separately because it constitutes a frequent source of neck masses due to a wide variety of causes, many of which are peculiar to the thyroid gland. Careful examination of the thyroid gland by palpation should always be included in every general physical examination. The metabolic, inflammatory and neoplastic diseases of the thyroid gland are extensive subjects and it is not the intent of this paper to review these.

#### V. Major Salivary Glands

The parotid, submaxillary and sublingual salivary glands also are afflicted with a wide variety of metabolic, inflammatory and neoplastic diseases, many of them peculiar to these glands. Each of these glands is confined by its own facial compartment, so that masses arising in these glands tend to be anatomically restricted. En-

largements of the submaxillary gland and of the tail of the parotid gland are sometimes difficult to distinguish from inflammatory and neoplastic involvements of adjacent lymph nodes.

Examination of the saliva, and radiographic sialography of the respective glands are helpful in distinguishing salivary gland disease from adjacent mass in the neck.

#### VI. Constitutional

This category includes a wide variety of generalized disorders which may make an appearance in the neck as a mass. Such disorders include the lymphomas, sarcoidosis, collagen-vascular diseases, and the reticulo-endothelioses. Recognition of the underlying constitutional disease is of fundamental importance and can often be done by a general history and physical examination, aided by routine and special laboratory and x-ray studies. Occasionally the diagnosis requires confirmation by biopsy of the neck mass. The lymphomas are usually best treated by irradiation therapy.

#### VII. Trauma

##### A. Hematomas

These are more common in patients with disorders of blood coagulation. If the hematoma is large, it should be drained.

##### B. Subcutaneous emphysema

This is characterized by its soft, crepitant quality on palpation. This can result from surgery or trauma of any part of the airway including tears in the pleura. Air can also be introduced into the soft tissues through mucosal surfaces when air under pressure is used around the mouth, nose or throat. The subcutaneous air will gradually resorb spontaneously, but the underlying site of leakage must occasionally be located and repaired. Great amounts of air in the soft tissues of the neck can encroach upon the upper airway, occasionally necessitating tracheostomy.

##### C. Foreign Bodies

These may reach the neck either through the skin or mucus membranes. They tend to set up foreign-body granulomatous reactions around themselves which increases the size of the mass. All sharp foreign bodies must be removed because of the hazard of migration and penetration of a vital structure in the neck or upper thorax. Most other for-

eign bodies are also probably best managed by removal because of their tendency to produce secondary infection and granulomas. X-rays are helpful in localizing the radio-opaque foreign bodies. A careful history of previous ingestion of a sharp object would lead one to suspect a foreign body as the nidus for a para or retropharyngeal granulomatous mass.

#### D. Blood Vessel Injury

This category includes aneurysms and arteriovenous fistulae of the vessels of the neck. These are generally recognizable by their pulsations and bruits. Occasionally an aneurysm of the arch of the aorta will present at the root of the neck and is not infrequently associated with a heart murmur.

#### SUMMARY

Masses in the neck may arise from a wide variety of causes. Every neck mass deserves careful study and consideration in relation to the history of onset, the age of the patient, the location of the

mass in the neck, the physical characteristics of the mass, and any other associated regional or generalized lesions or diseases. Surgical biopsy or excision of most neck masses should be deferred until after a thorough regional and systemic study of the patient has been made; in many cases, surgical biopsy of the mass will become unnecessary or indeed contraindicated.

#### BIBLIOGRAPHY

1. Walter P. Work & Brian F. McCabe, Disorders of the Salivary Glands, Otolaryngology, Coates, C. M. & Schenck, A. P., W. F. Prior Co., Inc., Hagerstown, Md.
2. W. P. Work & C. A. Proctor, The Otologist and the First Branchial Cleft Anomalies. Ann. of Otol., Rhinol., & Laryngol. 72:548-62, June, 1963.
3. F. N. Ritter, A Clinical Study of Actinomycosis. Arch. Otolaryn., 74:314-22, Sept. 1961.
4. Jack Davies, Embryology of the Head and Neck in Relation to the Practice of Otolaryngology. American Acad. of Ophth. & Otolaryn., 1957.
5. A. L. Beck, Deep Neck Infections. Otolaryngology, Coates, C. M. & Schenck, H. P., W. F. Prior Co., Inc., Hagerstown, Md.
6. H. Martin, Surgery of Head and Neck Tumors, Hoeber and Harper, 1961.



#### Arterial Fluorescein Studies in Diabetic Retinopathy

E. M. Kohner et al (Postgraduate Medical School, Duncane Rd, London) *Diabetes* 16:1-10 (Jan 1967)

Fifteen patients with diabetic retinopathy were studied with retinal photography after injection of sodium fluorescein into the innominate artery. This method allows for the capillary bed to be visualized in life and restudied at intervals. Of the abnormalities observed microaneurysms were the most common, being invariably present around areas of capillary closure, but they were also seen on capillaries which appeared otherwise normal. Less commonly seen capillary changes included generalized dilatation and shunt vessel formation. Regions of capillary closure were observed even in the mildest retinopathies. Three patients had large areas, about 5 mm in diameter, of capillary destruction in the perimacular area; occlusion of arterioles and venules around the macula was also present. Of the functional abnormalities, flow changes and leakage from new

vessels were striking. The observations are discussed in relation to the pathogenesis of diabetic retinal vascular disease.

#### Cardiac Arrhythmias in Acute Myocardial Infarction: I. Complete Heart Block and Its Natural History

A. E. Jackson (Parkland Memorial Hosp, Dallas) and F. A. Bashour *Dis Chest* 51:31-38 (Jan) 1967

Complete heart block complicating an acute myocardial infarction frequently follows lesions of the diaphragmatic wall. This arrhythmia is a temporary phenomenon. It subsides by a step-wise decrease in the magnitude of the A-V block, from complete heart block to second heart block in some patients and then to first degree A-V block and finally to normal A-V conduction. No permanency of the heart block was observed in the authors' patients. The rich vascular anastomosis in the region of the A-V node is responsible for restoring normal conduction to the A-V node.

# "SADDLE BLOCK"

R. B. Clark, M.D.,\* F. E. Greifenstein, M.D.\*

**S**addle block", a term used to describe low spinal anesthesia, was popularized by Adriana, who published his first report in 1946. Since then it has become firmly entrenched in the literature. The technique involves the use of a hyperbaric local anesthetic solution, administered intrathecally in the sitting position. The patient is left in the sitting position for 3-5 minutes, and the anesthesia is confined to the sacral segments, the perineal or "saddle" area.

Actually, saddle block can be achieved by several methods—spinal, caudal, lumbar epidural or pudendal block. By implication it is understood to mean a block produced by a low spinal anesthetic. Unfortunately general usage has virtually separated it from other spinal anesthetics; reports refer to a series of patients anesthetized by "saddle block", and another series with "spinal anesthesia". Misusage has confused the issue to the point where an obstetrician asks an anesthesiologist if he is going to give his patient a saddle block for a Cesarean section, or "you can give my patient a saddle block, but don't give a spinal!"

To achieve a saddle block, with low spinal anesthesia, the patient must remain in the sitting position for 3-5 minutes, or upward spread of the solution occurs, with anesthesia higher than the saddle area. Few people have the patience to do this; so the patients are placed supine after 30 seconds to one minute. This is quite acceptable, as it gives

the obstetric patient complete pain relief; but it is no longer a saddle block. It is then a low spinal anesthetic, and should be called such.

If saddle block is achieved with spinal anesthesia, it should be recognized as a spinal anesthetic, with its hazards and complications. Headache and neurological complications, arachnoiditis, abducens palsy and the cauda equina syndrome, although rare, are as likely with saddle block (low spinal anesthesia) as with higher spinal anesthetics. Hypotension is less likely to occur with anesthesia confined to the perineal area than if it extends higher, but may occur. The degree of hypotension is directly related to the amount of sympathetic block; and the higher the block, the more likely and more severe will be the fall in blood pressure. Sympathetic innervation is more sensitive to blockade than the sensory component; and even though sensory block is confined to the perineum, sympathetic block may extend 2-6 dermatomes higher.

We feel then, that although saddle block is a wonderfully descriptive term, it has been misused to the point of confusion. This may seem like a small point—a case of much ado about nothing—until someone asks you "are you going to give my section patient a saddle?"

We propose that the term "saddle block" be discarded, and the term "low spinal anesthesia confined to the saddle area" be substituted.

\*4301 West Markham, Little Rock, Arkansas.



## Prognostic Value of Reduced Maximum Breathing Capacity in Tuberculosis

N. S. Cherniack et al (Research-Education Hosp, Chicago) *Dis Chest* 51:22-30 (Jan) 1967

At least 10% of 143 patients hospitalized with tuberculosis had maximum breathing capacity (MBC) less than 40% of the predicted normal value. Reductions of MBC of this degree were generally associated with severe obstructive disease and far advanced tuberculosis. The fatalities

in 177 patients with an MBC less than 40% of normal was three times as great as in 185 patients with a normal MBC. In the abnormally low MBC group, mortality was greater in every category of severity of pulmonary tuberculosis than in the normal MBC group. The results indicate that severe obstructive pulmonary disease in patients with tuberculosis considerably worsens their prognosis.

# Report of Short Tour in Vinh Binh

John M. Grasse, Jr., M.D.\*

About a year ago I read of Project Viet Nam in Medical Economics. I have been a Medical Missionary for 7 years of my 15 in practice since graduation from Jefferson in 1952. In keeping with a desire to give periodic service in underprivileged countries I volunteered for 60 days. We left San Francisco March 17th arriving in Saigon March 20th for briefing preceding our tour of duty, mine to be at the Provincial Hospital in Phu Vinh on the Meikong Delta.

The briefing officer outlined our objectives (there were 8 volunteers in our group representing 8 states) as: 1) to carry home a picture of what is really going on in Viet Nam; 2) to help in the education of the Viet Name staff at the provincial hospital to which you are assigned; 3) to treat the patients and relieve suffering among any who came for help.

Our hospital was noted as having 300 beds, but my 22 bed woman's medical ward frequently had 3 or 4 in each bed, and so I'm certain it should be higher. Seven doctors including 2 volunteers (Dr. John Weaver, a Jefferson graduate of 1949 practicing general surgery at Pueblo, Colorado, and myself) on 2 months tours, cared for the 527,530 people in our province. The town also has 7 pharmacies, many dentists and other practitioners including those who use Chinese suction cup treatments, etc. Because security is uncertain our work is limited to daylight hours.

On my ward between 3/1 and 4/10/67 we had 217 admissions with 113 complaining of dysentery or gastrointestinal symptoms, generally related to the use of improperly washed food, contaminated drinks, and a lack of adequate waste disposal. March 24th we had a census of 85 on my ward because of a Staphlococcic Enterotoxin food poisoning epidemic when wedding guests were given spoiled fruit improperly prepared with canal water. The Viet Cong used this incident to scare the people into believing they had been poisoned by the chemicals used in a defoliation action nearby.

Pulmonary tuberculosis accounted for 25 admissions or 1 in 8. Most of the chest x-rays showed moderate to far advanced disease, frequently bilateral. Many had cavities with hemoptysis. Bron-

chitis and pneumonia made up 13 other admissions.

A patient with Ben-ben heart disease and a hematocrit of 7, and Fascioliasis were the most unusual diseases I saw. Suicidal attempt, schizophrenia, and mental illness accounted for 9 admissions. Dr. McDougal, a MILPHAP physician repaired an evisceration, a man who tried to commit "heri keri" after suffering with carcinoma of the stomach five years.

A survey of hematocrits on 100 admissions at the hospital between 3-18 and 4-8-67 showed a mean of 33. Malnutrition is uncommon, but iron deficiency anemia most likely springs from the high rice diet with insufficient meat and greens. A study of 50 stools taken between 12-20-66 and 4-10-67 showed 10 positive for Ascaris, 1 for whipworm, and 1 for liver fluke. I think it is clear that parasites do not account for the general state of anemia.

War wounds accounted for 96 admissions in February. Of these 30 were major casualties, 52 minor. The overall mortality rate was 5.71%. Post operative infection is no doubt the biggest problem, though getting adequate blood for replacement in already anemic patients with significant traumatic loss adds to the mortality. In one week we had 3 mine accidents with trucks destroyed and multiple injuries, many requiring not only amputations, but laparotomies as well. Elective operations are done when there is ample time and opportunity, but the risk is still high in light of limited blood replacement, part time nursing care, and a whole host of technical problems.

Laboratory and x-ray facilities were limited in scope but staffed with good technicians. During my assignment we made intermittent trips to outlying districts by helicopter for MEDCAPS. These are outpatient clinics in which we treated 30 to 170 patients per visit with whatever drugs could be obtained. Drug supply was short much of the time, though most patients were able to purchase their specific requirements at local pharmacies, which carry mostly French supplies.

April 15th I visited 2 other province hospitals at Cantho and My tho. These were better equipped and more adequately staffed than the hospital where we worked. The latter had a Philippine

\*Calico Rock Medical Center, Calico Rock, Arkansas.

surgical team in addition to volunteer physicians and native staff.

I was personally greatly impressed with the pacification program, often referred to as "the other war" or "nation building". It is generally thought of as our most important effort and includes not only medical aid to civilians, but agricultural improvement, public water improvement (eventually to include a city water supply for Phu Vinh), refugee resettlement, recreation,

labor unions, and cooperatives (neither yet established satisfactorily), etc.

Perhaps the most important thing I gained from 8 weeks in Viet Nam is a newer and greater appreciation for the blessings of America, those things we generally take for granted. The war is bound to be a long and tiring struggle. We must convince the South Vietnamese that democracy is a way of freedom based on self discipline. We know it to be the means of living a happy dignified life.



#### **Prognostic Significance of Circulating Tumor Cells: Five-Year Follow-up Study of Patients With Cancer of the Breast**

D. R. Webster and E. Sabbadini (Dept of Experimental Surgery, McGill Univ, Montreal) *Canad Med Assoc J* 96:129-131 (Jan 21) 1967

A five-year follow-up study is presented of 116 patients with proved cancer of the breast who were studied for the presence of circulating tumor cells. Such cells were found in 61 of the patients, but the five year survival rate was not significantly different from those in whom no tumor cells were found irrespective of the stage of the disease. The higher incidence of patients without circulating tumor cells in stage I was not sufficient to influence the survival rate of the whole group. While the validity of the identification of these cells is questionable, the presence or absence of tumor cells in the blood is of no prognostic significance.

#### **Palliative Urinary Diversion in Patients With Advanced Carcinoma of the Cervix**

D. T. Chua et al (Francis Delafield Hosp, New York) *Cancer* 20:93-95 (Jan) 1967

During a ten-year period 47 of 222 patients with advanced carcinoma of the cervix admitted to the Francis Delafield Hospital had ureteral obstruction on initial admission. All but 3 of 47 patients were treated with roentgen rays or radium or both; the exceptions underwent radical surgery. Twelve patients underwent palliative urinary diversion. There was no statistical significant difference in the survival rates of the patients who underwent urinary diversion and those who did not, irrespective of the stage of the disease and whether one or both ureters were involved; however, 8 to 12 patients who underwent urinary diversion had partial relief of their symptoms. The indications for urinary diversion followed by the authors are enumerated.



STUDIES FROM  
THE UNIVERSITY OF ARKANSAS MEDICAL CENTER  
THE DEPARTMENT OF

## OBSTETRICS AND GYNECOLOGY

WILLIS E. BROWN, M.D., Professor, and Chairman  
STACY R. STEPHENS, M.D., EDITOR

### POSTPARTUM HEMATOMA

James C. Romine, M.D.\*

Major hemorrhage into perigenital tissues and spaces is an uncommon obstetrical complication. This accident must be discovered early in the immediate postpartum period if serious sequelae are to be avoided.

The first case of postpartum hematoma was reported by Reuff in 1554. However, there has been a relative paucity of material in the literature. Only 770 cases were reported up to 1961 with no large series reported since that time.

Melody<sup>1</sup> suggested that postpartum hematomas be divided into two groups based on the timing of occurrence, immediate and delayed. Others have used anatomical boundaries for grouping of these hemorrhages as infralevator or supralevator in location. Infralevator hemorrhage includes vulvar type and connotes bleeding limited to the vulvar regions. However, many of these hematomas are not so limited and involve vaginal tissues as well as paravaginal spaces, the perineum, and often, the ischiorectal fossae. This latter extension may readily progress to areas above fascial boundaries and become retroperitoneal accumulations or rest between the leaves of the broad ligament.

A detailed description of perineal anatomy is beyond the scope of this paper, but we must bear in mind the rich venous plexus surrounding the vagina. The lateral border of the vagina is the most abundantly supplied due to the condensation of the surrounding fascia. This plexus of veins communicates with the hypogastric and the middle and inferior hemorrhoidal veins, as well

as the inferior vesical plexus. The entire venous system becomes engorged in the latter months of pregnancy and is felt to be the origin of most hematomas.<sup>2</sup> However, this by no means excludes bleeding of arterial origin which is quite possible.

The connective tissue space surrounding the vagina is contiguous with the paravesical, parametrial, and pararectal spaces. Therefore, hemorrhage arising in one space may dissect into the adjoining spaces.

The levator ani muscles are a barrier to the extension of paravaginal hemorrhage. However, on occasion, this barrier may be overcome resulting in sub-peritoneal hematoma formation. Furthermore, spontaneous hemorrhage into the broad ligament may occasionally occur secondary to ruptured varicosities.

#### MATERIAL AND METHODS

This paper presents the incidence, etiology, and anatomy of traumatic extravasations and recommends an acceptable method of treatment. Our experience and that of others in the prevention and prognosis will be discussed.

Data was collected from twenty-seven patients who developed postpartum hematomas at the University of Arkansas Medical Center between 1955-66. During the twelve year period, 27,509 patients were delivered, an incidence of one hematoma in 1,018 deliveries. Seventeen patients were Negro and ten were Caucasian; a ratio consistent with our clinic population.

Six patients (22 percent) were pre-eclamptic, two patients had kyphoscoliosis, and one patient had a partial abruptio placenta with evidence of hypofibrinogenemia.

\*Department of Obstetrics and Gynecology, University of Arkansas Medical Center.

The series included sixteen primigravidas (57 percent) with a mean age of 18.5 years and eleven multipara (43 percent) with a mean age of 31 years. There were four patients with a parity of five or greater. The mean age for the entire series was 23.6 years.

Thirteen patients (48 percent) received conduction anesthesia, ten saddle blocks and three epidurals. Eight of the patients (30 percent) had pudendal blocks either alone or in conjunction with paracervical block or nitrous oxide. Six patients (22 percent) received no anesthetic.

The mean duration of labor in multiparas was five hours and forty-two minutes with a mean second stage of twenty-four minutes. In this group the longest labor was twelve hours and thirty-two minutes and the shortest was one hour and fifteen minutes. The means of the primiparas were eleven hours and thirty minutes for the total duration of labor and forty-five minutes for the second stage. The longest primigravida labor was twenty-three hours and fifty-eight minutes.

Twenty-five infants (89 percent) were vertex presentations. Ten delivered spontaneously, elective low forceps were used in fourteen patients, (56 percent) and one infant was delivered by Kiel land rotation because of a transverse arrest. Frank breech was the presentation in two infants (11 percent); and these were delivered as assisted breech extractions with Piper forceps to the aftercoming head.

The mean weight of the infants delivered of multigravid patients was 7 pounds, 8 ounces with the largest infant weighing eleven pounds. The infants of the primiparous mothers had a mean weight of 6 pounds, 6 ounces. The mean weight of the entire series of infants was 6 pounds, 13 ounces.

Classification of hematomas revealed six vulvar (22 percent), eighteen vulvo-vaginal (67 percent), and three paravaginal (11 percent). Thirteen of the vulvo-vaginal hematomas or 48 percent of the entire series occurred in episiotomy sites. On the other hand, five hematomas (19 percent) occurred on the side opposite the episiotomy. There were no suprlevator or subperitoneal extensions in this series.

The presenting sign in thirteen patients (48 percent) was a vulvar or vulvovaginal mass. Six patients (22 percent) complained of perineal pain; two (7.5 percent) had postpartum bleeding; two (7.5 percent) presented initially with shock in the

postpartum period; and two patients (7.5 percent) had a fever of undetermined origin. Miscellaneous symptoms were urinary retention in one patient and weakness in a patient twenty-one days postpartum. Thirteen of the hematomas (48 percent) were diagnosed in the first twelve hours following delivery. Twelve were found no later than the third postpartum day. One patient was diagnosed on the fifth and another on the twenty-first day postpartum.

Twenty-six patients in our series were managed surgically. Surgical intervention consisted of evacuation of the hematoma site and packing in nineteen patients and evacuation with primary repair in seven patients. The patient managed conservatively was treated with sitz baths. Ten patients received antibiotics.

Twelve patients (45 percent) required an average of 1.7 units of blood. The greatest number required in a single patient was four units. Fifteen (55 percent) required no blood replacement. Twelve patients (45 percent) had a febrile hospital course. The average hospital stay was 6.9 days with a range of three to seventeen days.

Of the nineteen patients returning for postpartum examinations, fifteen had complete healing of the vagina and perinea. The other patients were noted to have present granulation tissue which subsequently disappeared.

#### **DISCUSSION**

The reported incidence of postpartum hematoma varies greatly. McClin and Bowes<sup>3</sup> record an incidence of 1:561 deliveries; Pedowitz, et al.,<sup>4</sup> 1:937; Eastman,<sup>5</sup> 1:500-1:1,000. Some report incidences as low as one in 7,000 deliveries. Our incidence of 1:1018 is comparable to the quoted studies.

Many concepts are involved in considering the etiology of these hematomas. Most authors agree that the bleeding is venous and originates from the paravaginal plexus of veins which are quite congested at parturition.<sup>6</sup> On the other hand, bleeding from one of the branches of the pudendal artery resulting in extensive dissection and hematoma formation is a distinct possibility. Excessive infant size has been incriminated as a possible predisposing factor.<sup>4</sup> In our series larger babies were the rule in multiparous patients, but an overabundance of excessively sized infants was not noted in primiparas. It is believed by many that the inelastic tissue of the primipara lends itself to more trauma and therefore, a higher incidence of

hematoma.<sup>7</sup> Over 50 percent of the patients in our series were primiparae. Also, prolonged labor has been implicated as the cause of pressure necrosis resulting in delayed hematomas. However, our series suggests that normal rather than abnormal labor was found in more frequent association with hematoma formation. It is of interest to note that only two patients required pitocin augmentation. A prolonged second stage was not a factor in our series. On the other hand, McNally<sup>8</sup> found this to be true in his experience. Traumatic delivery has been found in association with hematoma. Again, our series did not bear this out since only three births were potentially traumatic.

No definite correlation between type of anesthesia and hematoma formation can be made. Although eight patients in our series received pudendal blocks, it is difficult to label this procedure an etiologic factor. Severe vulvar varicosities have been mentioned in the literature as predisposing factors.<sup>9</sup> Two of our patients had varicosities which were thought to be the origin of the vulvar hematomas. Blood dyscrasias<sup>1</sup> have been suggested as pathological mechanisms in hematoma formation. This was not true in our series. The incidence of toxemia was slightly increased in our study but has not been found to be a constant factor by others. Our most common cause of postpartum hematoma was improper hemostatic technique in the repair of episiotomies, (48 percent).

The most common presenting sign was a vulvar or vulvo-vaginal mass. The extent of the tumefaction is best delineated by recto-vaginal examination. The mass is cystic and tender, and associated with a bluish discoloration of the overlying skin or mucosa. Severe perineal pain is a frequent symptom; and this complaint in the immediate or delayed postpartum period demands careful examination rather than attributing the complaint to the normal episiotomy site. Postpartum bleeding may occur when the expanding hematoma creates an exit through the skin or vaginal mucosa following pressure necrosis. Shock, anemia, and fever may be the initial presenting signs. In the sub-peritoneal type, persistent postpartum abdominal pain, shock, anemia, a high fundus, and a unilateral pelvic mass are the classical picture.<sup>10</sup> Unilateral leg edema has also been reported in this variety of hematoma collection.

Historically, hematomas were treated by con-

servative management. The mass was carefully observed for an increase in size or evidence of infection which then necessitated surgical intervention. Pedowitz, et al.,<sup>4</sup> reported a case in which a hematoma became encysted with a calcified wall requiring removal three months later.

In recent years, the trend has turned to immediate surgical management. After evacuation of the clot, all bleeding sites are sought for, and hemostasis is obtained by any feasible ligature or suture technique. If bleeding is controlled, primary repair may be undertaken. However, in many instances adequate hemostasis cannot be achieved because of extensive tissue friability. In these cases, after evacuation, the hematoma cavity as well as the vagina should be packed tightly. The exception is a paravaginal hematoma in which vaginal packing alone will suffice. The packing should be removed in twenty-four to thirty-six hours and the wound allowed to heal by second intent. Adequate blood replacement should be instituted as the situation demands. Also, broad spectrum antibiotic therapy is indicated in those patients with evidence of infection.

In cases of sub-peritoneal hematoma, laparotomy is indicated when evidence of increasing pelvic mass or shock is present. In some patients the bleeding may be controlled by absorbable packing.<sup>10,11</sup> However, hysterectomy may be required in those cases with continuing hemorrhage.<sup>7</sup> Pieri<sup>12</sup> advocates an approach of indirect hemostasis achieved by unilateral ligation of the anterior division of the hypogastric or uterine artery.

The prevention of postpartum hematomas should begin in the antenatal period with the correction of anemia and the treatment of toxemia. At the time of delivery an adequate episiotomy should be cut and meticulous attention be given to its repairs. The first suture should be placed above the apex of the vaginal incision to prevent retraction of vessels; definite bleeding points must be ligated; and close approximation of the deep tissues achieved. Vulvar varicosities should be protected as much as possible during delivery. In the postpartum period careful attention must be made to signs or symptoms suggestive of hematoma.

The prognosis for the intralevator hematoma after proper treatment is excellent. Even though many patients require blood replacement and/or have febrile courses, the average postpartum hospital stay in our series was only 6.9 days as com-

pared to the normal three day stay. Only a few patients showed incomplete healing six weeks postpartum, and normal perineal anatomy was eventually restored without further surgical intervention. Residual perineal pain has been mentioned in the literature but was not noted in our group of patients.<sup>3</sup>

### CONCLUSIONS

1. Perigenital hematoma is an infrequent but troublesome complication of the postpartum period.
2. The most common etiology of these hematomas is poor hemostatic technique in repair of episiotomies.
3. In those hematomas of appreciable size, immediate surgical intervention with evacuation of clots and primary repair is the procedure of choice. In other cases evacuation followed by packing is necessary.
4. Prevention of most hematomas may be achieved by good obstetrical technique and adequate hemostasis in episotomy sites as well as concerned postpartum observation.
5. The prognosis for these hematomas is excel-

lent if early and definitive management is performed.

### BIBLIOGRAPHY

1. Melody, C. F.: Paravaginal Hematoma, Calif. Med. 82:16, 1955.
2. Pierol, C. A., (Editor): Human Anatomy, Lippereott, Phil., 9th Edition, p. 2015, 1930.
3. McClin, T. W., and Bowes, V. M.: Puerperal Hematoma. Am. J. of Obst. & Gynec. 67:356, 1954.
4. Pedowitz, P., Pozner, S., and Adler, N. H.: Puerperal Hematoma. Am. J. of Obst. and Gynec. 81:350, 1961.
5. Eastman, N. J.: Obstetrics. Appleton-Century Croft, New York, 12th Edition p. 1046, 1961.
6. Samuelson, S.: Birth Hematomas of the Vulva and Vagina. Acta Obst. & Gynec. Scand. 33:338, 1954.
7. Walsh, F. J. and Ganser, H. I.: Puerperal Perigenital and Perineal Hematomas. Am. J. Obst. & Gynec. 56: 869, 1948.
8. McNally, H. B.: Postpartum Hematoma. So. Medical Journal. 45:708, 1952.
9. Lyons, J.: Postpartum Hematoma. New Eng. J. Med. 240:461, 1949.
10. Murray-Jones, J.: Postpartum Broad Ligament Hematoma. Medical Journal of Australia, 1:1025, 1960.
11. Ganser, H. I. and Walsh, F. J.: Postpartum Sub-peritoneal Hematoma. Am. J. of Obst. & Gynec. 74: 1116, 1957.
12. Pieri, R. J.: Pelvic Hematomas Associated with Pregnancy. Obst. & Gynec. 12:257, 1958.



### Chromosome Polyploidization in Human Leukocyte Cultures Treated With Streptonigrin and Cyclophosphamide

C. E. Nasletti and H. H. Spencer (VA Hosp, Ann Arbor, Mich) *Cancer* 20:31-35 (Jan) 1967

Treatment of culture human peripheral blood leukocytes with streptonigrin or cyclophosphamide resulted in morphological chromosomal changes, as well as polyploid and endoreduplicated mitoses. Polyploidy was present in 11% of cells treated with streptonigrin and in 15% of cells treated with cyclophosphamide. These findings, together with recent data showing polyploidization in normal human leukocytes induced *in vivo* and *in vitro* with chemotherapeutic agents and ionizing radiations, suggest that polyploidy and endoreduplication of chromosomes as reported in acute leukemia, might, to a large extent, be the result of concomitantly administered therapy.

### Percutaneous Renal Biopsy

J. K. Haddad and R. L. Mani (US Army Hosp, Fort Huachuca, Ariz) *Arch Intern Med* 119:157-160 (Feb) 1967

An improved method for percutaneous renal biopsy utilizing television monitoring and high dose infusion pyelography is described. Television monitoring allows the operator to visualize the opacified kidney and accurately place the biopsy needle. High dose infusion pyelography affords renal opacification far superior to that produced by the conventional low-dose technique. With this method adequate renal tissue was obtained in 22 of 23 (96%) patients without significant complications. The minimal morbidity in this series attests to the safety of the method.

## WHAT'S NEW?



### **Post-Graduate Continuing Education Program**

For approximately one year the Committee on Continuing Education and the Division of Audio Visual Communications have been investigating various ways and means to develop a catalyst for Continuing Medical Education which is produced by the University of Arkansas Medical Center and allied professional services.

The purpose of this catalyst is intended to help improve attendance as well as help develop program material which the physician, "in the field", feels will benefit his patient the most.

Although several other approaches, such as on and off campus meetings, etc., have been discussed; it is not the purpose of this presentation to elaborate on any other proposals, other than an Educational Medical Television System. I would like to emphasize that the use of television rated high among the physicians who responded to the Committee's Questionnaire regarding program presentations.

At this point, permit me to point out that we do not feel television is the complete answer. But, of all the approaches, it is the most promising. The opinion is based on the findings of Dr. Delbert Fisher who has investigated almost every conceivable approach to the problems at hand. Therefore, the following recommendations are based on Dr. Fisher's findings as well as my own.

First, since Arkansas is primarily a rural state and our physicians serve widespread areas, we concluded that getting away from the office is a major problem in the majority of cases.

Secondly, in other states faced with this problem, successful medical television programs have been instigated which have greatly elevated attendance problems. The programs are presented over open channel television such as our Arkansas Educational Television Network. In conversations with participants of open circuit program

we found no adverse reports. In this case, the material to be presented is chosen by a selection board. The material which could be damaging in the hands of an uninformed layman is presented in closed session during periodic Continuing Medical Education seminars.

Thusly, it is recommended, that the responsible medical services of this state develop a Continuing Medical Television Education Program.

Senator Lee Reaves, Director of the Arkansas Educational Television Network has made provisions for scheduling the programs at a mutually advantageous time. Senator Reaves has expressed a sincere interest in procuring locally produced programs in the Health Sciences.

Funding of this project must be a joint effort by all concerned parties. Cost of such a project will run in the neighborhood of \$30,000.00. An investment of approximately \$20.00 for each physician located in the state.

Included in this report you will find a rough cost estimate for equipment and personnel. One report was written in 1965. Since that writing the Medical Center has acquired some of the components necessary for Broadcast Television Standards.

On the current cost estimate you will please note that an investment of approximately \$12,000.00 is necessary to start a "pilot program".

The University of Arkansas Medical Center is acquiring this equipment on a lease-purchase plan. Financing additional equipment is impossible.

Essentially, we, as Medical Center representatives, are asking programming support and assistance as well as financial aid. We are not asking full financial support, but, rather, matching funds.

It is felt that we can better serve the physicians of our state by utilizing the television media. Eventually we will be capable of state-wide communications.

Our philosophy is simple . . . we feel we must go to the "man-in-the-field". He can't come to us.

### **CLOSED CIRCUIT TELEVISION OPERATION IN-PLANT PRODUCTIONS**

Before plans can be completed to broadcast live and video taped programs on a state wide scale it is necessary that the in-plant production facilities be completed.

This is due to the large area which has to be

covered for a complete and professionally produced program. For example, with a control room which has coax leads from all points in the hospital, education building and research building, portions of a program can be telecast from each. The patient can be observed in the hospital area, his laboratory work-up can be discussed in the research area, and his prognosis discussed in a class room lecture in the education building area.

All the above portions of the program would lead into a central control room where it could be video-taped and/or transmitted to class rooms where small or large groups could watch.

Cost of such an operation would read something like this:

Control room with switching, video-tape, live broadcasting over coaxial cable, cameras, studio and lighting equipment. Approximately \$45,000.00.

Complete coaxial wiring system with connectors. Approximately \$15,000.00.

Receivers for labs and a TV projector for large audiences. Approximately \$8,000.00.

Personnel for the operation, yearly:

2 cameramen—\$3,600.00 each

1 director—\$7,000.00

1 technician—\$5,000.00

A total of—\$21,000.00 per year

This is an initial investment of \$87,000.00.

An operating expense per year afterwards—\$31,000.00.

#### **Report to Continuing Education Committee**

on

#### **Medical Education Broadcast Television System**

The items listed below are necessary for broadcast television (FCC regulations). They do not include transmitting equipment. Transmitting will be handled by The Arkansas Educational Television Network.

1. Two Broadcast Television Cameras.....	\$6,000.00
2. Switcher, E.I.A., Special Effects.....	3,000.00
3. One Hour Long Video Tape (15 rolls).....	900.00
4. Misc. Equipment and Installation.....	1,500.00
5. Film and Slide Chain.....	1,500.00

TOTAL ..... \$12,900.00

The University of Arkansas Medical Center has a present investment of approximately \$11,000.00 in television equipment necessary to complete a Broadcast Television System.

Additional personnel will be required. They are: 1 Cameraman, 1 Secretary, 1 Director, 1 Engineer.

To start a "pilot program" such as this one;

only a secretary and cameraman are necessary. As the program develops, the additional personnel will be needed. Hopefully, we will be able to utilize present University of Arkansas Medical Center personnel the first year. This, of course, will depend entirely upon work load.

For each hour of "on-the-air" television time; a total of 80 man hours can be considered as a rough estimate.

#### **Postgraduate Symposia**

	Total Hours	Instruction	Price
1. Advances in Cardiology October 27 and 28, 1967 UAMC, Departments of Medicine, Pediatrics, and Surgery	14		\$40.00
2. Clinical Pathology of White Blood Cells January 20, 1968 UAMC, Department of Pathology Open to Medical Technologists and Pathologists	7		7.50
3. Obstetrics-Gynecology Symposium March 7, 1968 UAMC—Department of Obstetrics- Gynecology	6		25.00
4. General Surgery Symposium March 15 and 16, 1968 Hot Springs, Department of Surgery	8		40.00

#### **Continuing Education Courses**

1. Postgraduate Psychiatry Seminars			
A. Basic			
1) two evening seminars, monthly x 6 months	24		50.00
2) two afternoon seminars, monthly x 6 months	24		50.00
B. Advanced—one seminar weekly for 2 terms of 12 seminars each	48		50.00
C. Regional—One seminar monthly for two terms of three months each	12		30.00
2. Postgraduate Medicine Seminar 2 hours Saturday morning, twice monthly for 5 months	20		50.00
3. Post graduate Pediatric Seminar 2 hours Saturday morning, twice monthly for 5 months	20		50.00

#### **Correspondence Course**

General Pediatrics—7 monthly case discussions with optional final exam for AAGP credit	15		35.00
Total Hours		198	

#### **September 1, 1965 to August 31, 1966**

Number of courses presented	8
Total hours of instruction	375
Number of physician registrations	167
Number of individual physicians registered	152
Number of courses cancelled because of lack of registration	None

**September 1, 1966 to August 31, 1967**

Number of courses presented	10
Total hours of instruction	157
Number of physician registrations	159
Number of individual physicians registered	138
Number of courses cancelled because of lack of registration	1
<b>Results of Questionnaire of Arkansas Physicians Regarding Continuing Education Programs Summer, 1966</b>	
1. 1431 Questionnaires mailed—136 returned—or 9.5%	
2. Approximately half had attended a 1966 program.	
3. Reasons for non-attendance	
Time of Week	62
Topics	55
Conflict with other meetings	18
Time of year	13
Inadequate information provided	12
Cost	7
Prefer out-of-state meetings	5
4. Scope of Programs	
a. Restricted topic in depth	82
preferences	
General review	69
b. Visiting Lecturers	73
UAMC faculty	75
c. At UAMC	111
Hot Springs	41
Little Rock Hotel	18
d. GP Orientation	46
Specialty orientation	62
e. Several 1 day programs	76
few 2-3 day programs	49
few short programs	19
5. Would you attend more than one program yearly?	
Yes—109    No—15    Try—9	
6. Preference for other continuing education program formats	
a. 5 day refresher training on wards	
Yes—43    No—57	
b. One day a week (8-10 week) refresher training on wards	
Yes—53    No—57	
c. Correspondence courses	
Yes—39    No—74	
d. Closed circuit TV clinics	
Yes—71    No—30	
7. Types of presentations	
Lecture	40

	first choice votes
Live Clinic	24
Panel discussion	20
Clinical conference	19
Bedside rounds	10
Patient demonstration	6
Laboratory work	4
8. Future program topics	
Cardiovascular disease	62
	first four choice votes
Chest disease	53
Arthritis and Rheumatism	36
Dermatology	29
General medicine	28
Allergy	27
Adolescent medicine	25
General surgery	22
General pediatrics	21
Orthopedics for GP	16
General Ob-Gyn	16
ECG	13
Biochemistry	12
Malignant Disease	12
General Psychiatry	10
Endocrinology	10
Gastroenterology	8

**Comments From Postgraduate Questionnaire**

a) I feel that the programs should be specifically directed toward either general practitioners or in the case of the specialties toward an individual specialty. I prefer a general review type of course where the stress is placed upon diagnosis and management.

b) A mimeographed summary of each speaker's presentation would help.

Every course should be for the application of benefit to the patient—not the unusual case we would refer to a specialist anyhow.

c) The presentation of the basic problem in diagnosis and therapy with the more recent new developments in diagnosis and treatment. In general, some speakers could give less minute details and hit the more outstanding diagnostic and therapeutic aspects of the problems under discussion.

d) Regional post-graduate programs should be offered and I believe that this has probably been tried in the past.

e) I don't want to go to meetings and hear a specialist talk about a highly refined surgical technique, a radical surgical approach to a rare tumor

Sick,  
and  
worried  
sick



# PHYSICIANS' DIRECTORY

FRANK PADBERG, M.D.

JIM J. MOORE, II, M.D.

## DRS. PADBERG & MOORE NEUROLOGICAL SURGERY

SUITE 704—DOCTORS BLDG.  
500 SOUTH UNIVERSITY

MO 6-5466  
MO 6-5468

LITTLE ROCK, ARKANSAS

## C. FLETCHER WATSON, M.D. OBSTETRICS AND GYNECOLOGY

903 DONAGHEY BUILDING

PHONE FR 2-7513

LITTLE ROCK, ARKANSAS

ROBERT WATSON, M.D.

RAY JOUETT, M.D.

JOHN H. ADAMETZ, M.D.

## DRS. WATSON, ADAMETZ and JOUETT NEUROLOGICAL SURGERY

1026 DONAGHEY BUILDING

FR 5-5547

LITTLE ROCK, ARKANSAS

## ELLIS P. COPE, M.D. DERMATOLOGY

Phone FR 4-8884

328 Donaghey Building

Little Rock 615 Donaghey Building

Little Rock, Ark.

## SAM PHILLIPS, A.B., M.D., F.A.A.P. Diseases of Children—Consultations

Suite 502, Doctors Building  
500 SOUTH UNIVERSITY

MO 4-4171

LITTLE ROCK, ARKANSAS

## PHILIP T. CULLEN, M.D. HENRY D. JOHNSON, M.D. DIAGNOSIS AND INTERNAL MEDICINE

SUITE 607—DOCTORS BLDG.  
500 SOUTH UNIVERSITY AVE.

MO 4-3021

LITTLE ROCK, ARKANSAS

## ELECTROENCEPHALOGRAPHY LABORATORY LOUIS A. COHEN, M.D.

219 North University  
Little Rock, Arkansas

Telephone MO 4-4026

►► DOCTOR ►►

THIS SPACE AVAILABLE

Write for Rates

ARKANSAS MEDICAL SOCIETY

P.O. Box 1208

FORT SMITH, ARKANSAS

or a new complicated laboratory test that is very expensive and for which no one has a use for at the present time. I do like to hear how specialists treat the common complaints—common disease with latest techniques. A portion of the time should be spent on the very latest outlook on the rarer disease, tests, treatments that are not used often but are breakthroughs—new ground so to speak. Most emphasis should be placed on the things that occur most often.

f) Have enjoyed those with patient presentation and demonstration with general discussion by the Medical Center teaching staff. Practical application of clinical diagnosis and treatment are of more interest than research papers by the resident staff.

g) I think academic intensive reviews of basic science, anatomic demonstrations, or causes of basic physiology or reviews as to respiration, cardiology, etc. would be helpful.

h) I feel many one day courses can be given by UAMC doctors and be of benefit to the practicing physicians of Arkansas. These should be at regular intervals and they would grow to something important to all.

i) Professional ethics is very much neglected in late years. Immunology should be included in pediatrics.

j) I would like to see regional courses set up giving detailed instruction on skills as well as basic subjects conducted one day a week over a period of time sufficient to cover the subject.

k) In my opinion, you need to come to us, not us to you. All of your programs are good for the doctors in a 50-60 mile radius of Little Rock. If you divide the state up and have meetings of 3:00 to 6:00—supper—7:30 lectures in towns such as El Dorado, Fort Smith, Paragould, Texarkana, the doctors of those parts of the state could better attend. Four speakers in one car can travel better than 40 physicians in 40 cars.

l) The university concept desperately needs to be extended, so that the physician in private practice can continue to improve himself. Often the doctor faces real pressures and often he is not sufficiently aware of what he needs or how badly he requires continuing education. A cold, sterile precise approach will not solve the doctor's needs and may make it more difficult to eventually reach him. No matter how great the effort made by the University in the past, most doctors, if pressed, would state that the University hasn't helped

enough and that the approach has not been directed towards them.

m) Something regarding medical economics would benefit Arkansas Physicians. This should include: 1) medicare, 2) solo vs. group practice, 3) how to budget your time, 4) office management, 5) insurance coverage, 6) doctor-patient relationship.

n) The more I think about the closed circuit TV, the better I like it.

o) I feel the need for programs on many things, of course, but those things that have changed the most in management at office level would be best for me.

p) It is my feeling that if it is possible to have several meetings a year, at least one of these should be a General Practice Review, lasting at least 3 to 5 days. I believe this should be sponsored by the University, with and/or in conjunction with the AAGP. This would give further stress on the direction of the University Medical Center in turning out "family doctors" which are so vitally needed. With tremendous patient loads, we want meetings which contact notable individuals in their related fields supported by the clinical interpretations of the University Staff, and programs which reveal practical applications of diagnosis and therapy, all wrapped up in as short a time as possible and covering as many general subjects as possible. Practical therapeutics is the big drawing card to the G.P. The General Practice Review should be offered twice yearly, changing only a few of the basic topics and inviting different lecturers.

q) I think the programs have been handled well. Recommendations: 1) use Wednesday and weekends, 2) have some programs at L. R. Hotel and some at Medical Center, 3) have some programs in cities over the state, 4) combine local and visiting speakers.

r) Two-day courses should include a dinner meeting followed by a 2 to 2½ hour night session. Television and audio visual aids are more effective for teaching and absorbing both from the teacher and the pupil standpoints.

s) Your visiting "experts" of national repute were well received and I thoroughly enjoyed them, but I feel our own staff at the U. of A. Med. Center has given me more desirable and helpful programs on things that apply to my everyday practice and I believe we should have more of these.

t) I am very pleased to see evidence of more

emphasis on postgraduate medicine at UAMC, as I have felt that this has been one of our weaknesses in the past. You certainly have my full support for this.

u) The Pediatric meeting has been in February. This is our most busy season. Could it possibly be another month—late September or late spring?

v) I feel that the programs offered at the UAMC are primarily of value to the GP and that, unfortunately, the subjects covered are frequently not on subjects in which the GP has the greatest deficiency of knowledge and need. It has been my experience, for example, that there is a dire need to offer a course or courses in the handling of medical neurology and neurosurgical problems at the GP level. I would also like to see continuing education programs instituted for the various specialties to keep them up to date.

w) Though one is interested mildly in many other subjects, he hardly has time for meetings not even touching his specialty.

x) I am an EENT specialist and would not care to attend seminars on general topics outside my field. (Several specialists made similar comments)

y) Programs thus far held are and have been directed almost entirely to the general practitioner whereas this state has many specialists in several fields. It is my opinion you have grossly neglected this aspect (emotional problems) of post-graduate education.

z) If the surgery department will plan programs at the specialist level, I think they will be well received by the surgeons in the state.

### **Continuing Education for What?**

GEORGE E. MILLER, M.D.\*

University of Illinois College of Medicine, Chicago

The answer to the question posed by the title of this presentation would seem to be obvious: the purpose of continuing education is clearly to improve the quality of patient care. While this generalization would probably produce full agreement, it is incomplete without the next question: what care needs improvement? At this point the appearance of harmony may begin to disintegrate as discordant notes of special pleading begin to emerge. Out of the ensuing noise, one common theme can be identified: practitioners need more information. There may be no consensus about what information they need, but there is little

\*Presented to the Section on Continuation of Medical Education at the 77th Annual Meeting of the Association of American Medical Colleges, San Francisco, October 21, 1966.

\*\*Director of Research in Medical Education.

dissent from the view that the world of medicine is changing so rapidly as a result of contemporary research that what is current today will be dated in a few months and obsolete in a few years. And the cries of despair are mounting as the gap allegedly widens between the explosive growth of new knowledge and its application at the bedside.

In the face of such a growing threat to their professional competence, it is no wonder that *practitioners clamor for some better means of dealing with the flood of information that threatens to engulf them and that educational programmers grasp at any straw which gives some promise of worth.* The current straws are familiar to all: *programmed instruction, 8 mm. single-concept films, television—both one and two way, either live or taped—among others.* Each has been identified as a potent mechanism for meeting this educational need in a fashion that makes it easy for the already overworked practitioner to dip into the treasures that teachers have found for him. And when, on those rare occasions that we press him, he demonstrates that he can recall verbatim (or at least in reasonable facsimile) the information he has sampled, then we are very pleased, particularly if he also reports that he has enjoyed both the dose and the vehicle.

I am sure you recognize the tone of irony; but lest there be any doubt, let me state bluntly the conclusion to which I have been led by the inescapable evidence of our failures: we have been educating for the wrong thing.

It is not my intent to deny the critical importance of biomedical research or the splendor of an incredible expansion in the body of information available to those who seek a detailed understanding of human health and disease. It is simply to point out that *the exquisite elaborations of contemporary investigation are generally of major significance in the care of relatively few patients.* In our eager dissemination of new information, we seem most often to be working at the upper extremity of an S-shaped curve where an immense instructional investment is likely to result in a very small increment in the quality of patient care. The question then is not one of absolute worth of new knowledge, but of relative priorities in continuing education. *Shall attention be given chiefly to those things that will benefit only a few, or to those things likely to be of great import in the care of many.* Realistically, in the matter of new knowledge that is potentially beneficial

to the many, it must be evident that a physician will scarcely be able to avoid it if he reads a daily newspaper, *Time*, or one of the summary news sheets that appear so regularly in our mail.

#### Categorical Content Model

What then is the problem? Any careful review of continuing medical education in the United States today will lead inexorably to the conclusion that *most programs are based upon a categorical content model. They are built around subjects: cardiology, oncology, physiology, biochemistry, endocrinology*. Name a department or subdivision of a medical school and you have named a continuing education program. Name a diagnostic or therapeutic tool and you have identified another. The assumption that appears to underlie this educational model, an assumption derived from the long tradition of the schools (note that the reference here is to experience, not success), is that practitioners who learn more about these topics will transform this knowledge into action. Yet the fact seems to be that such translation does not necessarily occur. From John Youman's study in 1935 (1) to John Williamson's study in 1965 (2), there have been repeated and disheartening examples of the failure of education built upon the content model to alter substantially the behavior of practitioners. By what devious path, one might reasonably ask, are we then led to the conclusion that more information about the importance of doing Pap smears for early detection of cervical cancer will lead physicians to carry out this test when it has been the discouraging experience of the American Cancer Society and the National Cancer Institute that in spite of an intensive informational program for a decade this simple maneuver is omitted from the physical examination more often than it is performed.

Yet we persist in talking of bringing more information to the practitioner, of bringing it to him at his hospital or his office or his home, of making the communication more appealing and more convenient. We talk of better printed informational sources, of primary publications and abstracts and bibliographies. We try to convince each other of the importance of telephone lines to carry information through illustrated presentations, or ingenious dial-a-lecture methods. We talk of wide-band communication systems for television and computers, bidirectional to allow ac-

tive participation. We seem enchanted by the idea of a network that allows the videotape lectures and demonstrations made in one center to be shipped to another for their delectation. *It is true that these are all magnificent and exciting technologic advances, but some of those outside medicine who look more coolly at the educational potential of such devices are not quite as enthusiastic as we seem to be.* At a recent conference jointly sponsored by the Department of Defense and the Office of Education on the topic "Engineering Systems for Education and Training" one of the most perceptive spokesmen noted:

. . . the education technology industry . . . knows a great deal about the science and technology of information processing and transmission, but it knows very little about the human receiver of that information. The human receiver, the man who must learn and recall the information transmitted by this sophisticated new equipment remains largely untouched . . .

And at another point in the proceedings the same acute observer was heard to say about the value of speed reading courses for executives who must cope with an increasing flow of information across their desks:

The problem will never be solved by speed reading courses. What we really need are courses to teach people to write things that are worth reading slowly.

#### Process Model

For all these reasons, it would seem that the time has come to try a different educational model — one built upon solid evidence about the way adults learn rather than upon the long-honored methods of teaching them. There is ample evidence to support the view that adult learning is not most efficiently achieved through systematic subject instruction; it is accomplished by involving learners in identifying problems and seeking ways to solve them. It does not come in categorical bundles but in a growing need to know. It may initially seem wanting in content that pleases experts, but it ultimately incorporates knowledge in a context that has meaning. It is, in short, a process model of education.

Let me hasten to assure you that I do not mean to assert that knowledge and performance are unrelated; they are clearly overlapping qualities. It is also clear that they are not identical dimensions. The best performance is built upon sound information; but the provision, or even the ac-

\*Dr. John Williamson and Dr. Marshall Alexander were the primary investigators and a complete report of the work will be published shortly.

quisition, of sound information is no assurance that it will occur. Let me illustrate this by describing the first stage of a long-term demonstration and study of continuing education which has been launched at the University of Illinois Center for the Study of Medical Education, with the support of the USPHS Bureau of State Services.\*

It began with a question developed by the study group representing a community hospital and the medical school: to what extent do physicians respond to unexpectedly abnormal results on 3 routine admission laboratory tests—hemoglobin, urinalysis, and fasting blood sugar? The charts of patients discharged during a one-month period were systematically studied to answer this question, and the answer was not particularly reassuring: only 35 per cent of the unexpected abnormalities produced any perceptible physician action. A startled education committee agreed that an educational problem existed, and a decision was reached that the instructional method to correct it would be a simple presentation and discussion of the data with expert consultants. More than 80 per cent of the staff members took part in the meeting; and at its end there was a general acknowledgment that something must, and would, be done promptly to correct what the staff judged to be unacceptable professional performance. One might have concluded from this response that the educational effort had been successful, but confirmation required data. These were gathered by replication of the chart study one month later—and with identical results.

I will not describe the rest of the effort which transformed this initial educational failure into ultimate success for the outcome is irrelevant here, but the simple and long-documented fact illustrated by this vignette is that men learn what they want to learn. The first step in this long process is not to tell them what they need to know, it is to help them to want what they require. It means involving participants in identifying their own educational needs, in selecting the learning experiences most likely to help them to meet the needs, and in assessing whether they have learned what was intended, not merely determining whether they took part in the learning experience, or even whether they like it. And if the final evidence clearly demonstrates that the desired learning did not occur, then another look must be taken at both the objective and the instructional method

to determine which requires change.

*Physicians are basically pragmatic and seek things that are useful to them. Academicians, on the other hand, appear to equate the pursuit of basic principles (as we like to describe what we do in our daily work) with ultimate truth and are inclined to demean the practitioner who keeps asking for practical answers.* There is no implication in this observation that educational programs should become answer-giving sessions, but it is important for educators to acknowledge and exploit the pragmatic orientation. It is just as legitimate to be interested in therapy as in diagnosis, in the indications for a specific medication as in the mechanisms which produce its effect. Either may be the means of attacking a problem—or an exercise in pedantry.

### Objectives

In a very practical sense, the most important element of continuing education may be that of leading practitioners to a study of what they do, to an identification of their own educational deficits, to the establishment of realistic priorities for their own educational programs. There must be many ways of accomplishing this end, but one with which we have gained some experience begins by delineating the health needs of the population served by an individual practitioner or a hospital staff. Using available hospital data as it is recorded in the professional activities study, John Williamson developed a computer program that orders these health needs by weighting three variables. *The first is disease incidence*, for, other things being equal, diseases that are more frequent probably deserve more educational attention than those less regularly seen (in contrast to what occurs in many hospital programs where the grand rounds built upon a patient problem no one has ever seen before or is likely to see again is widely applauded). *The second variable weighted in the computation is individual disability produced by these diseases.* This is estimated through such components as mortality and morbidity rates or the number of complications produced. Again, other things being equal, it seems logical to give more educational attention to those things which produce great disability than to less disabling disorders. *Third, a variable labeled "social disruption" is estimated, using such elements as the number of dependents, the age of the patient, and the cost of illness as indexes of the degree to which individual illness may affect the*

*family and related social units.* While the weighting may be arbitrary, it is not immutable; and the method provides a start in systematic definition of the individual and social problems physicians encounter in the patient population with which they deal.

A modification of this general methodology was utilized by Storey and Castle (3) as part of the Utah Pilot Study in the late lamented National Plan of the American Medical Association. Here individual physicians were asked to record the clinical problems they encountered over a forty-eight-hour period, as well as a personal perception of their educational needs. Bergman and his associates at the University of Washington<sup>4</sup> did an observational analysis of the work of pediatricians from which it was possible to identify many of the performance skills required by this medical specialist. Similar studies of office practice have been carried out by Greenhill in Canada<sup>5</sup> and Banker and associates in Missouri.<sup>6</sup> *Each represents a method of initiating the process of establishing educational objectives by identifying the problems with which the potential learner must deal, rather than building programs upon problems a faculty would like to teach him how to solve.*

Once health needs of a target population have been determined, an inventory of the resources (information, professional skills, diagnostic and therapeutic tools) available to meet them can be developed. If it becomes clear that little or nothing can significantly influence the outcome of a frequently encountered clinical problem, then wisdom would suggest that educational attention be directed to other things about which something can be done, while encouraging research on the problems that remain to be solved. This is another way of illustrating a rarely verbalized observation that research interests of teachers are unlikely to be the most useful program determinants in the continuing education of practitioners, since the ever changing interface between the known and the unknown is rarely the point at which the most profitable educational investment can be made.

Finally, practitioners need to be involved in an analysis of the extent to which they use themselves and the available resources to meet needs that have been identified. The documentation of discrepancies between optimal and actual performance is not an end in itself—it is merely the beginning

of an educational process with the greatest likelihood of success: that which is built upon demonstrated and acknowledged need.

Even this hasty conceptual sketch of a process model for continuing education must make one thing very clear: the role of both teacher and learner will be far different from that to which we have become accustomed. As one observer has put it, the practitioner-learner must progress steadily from listener to questioner to participant to contributor. If the practitioner is to accomplish this shift, the academician teacher must also change, but in the opposite direction, until at last he becomes a thoughtful listener to those who are trying desperately to tell him some of the things they need if they are to be more successful in their work, instead of remaining a gifted dispenser of things they might use to become more like him.

#### Conclusion

Continuing education should mean continuing self-education, not continuing instruction. If this desirable goal is to be accomplished, there must be movement away from the content model, which encourages dependence upon teachers, to a process model, which demands a significant measure of self-reliance—a shift away from preoccupation with courses and methods, toward an augmented concern for educational diagnosis and individualized therapy. *It does not mean an immediate abandonment of present program forms, but it is likely to be accompanied by a slow erosion of the faith which presently supports them.*

However, even those who accept the conclusion might reasonably ask whether it is practical. My own response is an unequivocal yes, for we have a rich variety of mechanisms both old and new that are readily available if we will only reach out and grasp them. Let me note only 2 that have captured the contemporary stage. The Regional Medical Programs (P. L. 89-239) is one which requires cooperative ventures among medical schools, the health professions, voluntary health organizations, public agencies, and the public at large. While it has an unfortunate categorical orientation, the categories are sufficiently broad to permit bold new ways of attacking the problems of continuing education through the study of patient care. Happily, those who are guiding the program seem disinclined to encourage merely an increased pace in the development of more refined tools to carry out the same old educational strategies. They seem instead to be calling for

innovation coupled with evaluation and to be ready with the funds that make it possible to do these sometimes costly things.

A second resource is the Interuniversity Communications Council, better known as EDUCOM. The basic mission of this agency is to explore the means by which contemporary educational and communications technology can be exploited by universities acting in concert, rather than singly. A Task Force on Continuing Education has recently been established by the Council and it is prepared to respond to the needs of the health education community as well as to the other professions represented in the university. The early descriptions of EDUCOM may appear to have emphasized television, radio, and computer networks for purposes of information storage, retrieval, and transmission; but there is no basic reason why they cannot also be used for other things that can serve educational diagnostic as well as instructional purposes (for example, computer simulations of clinical problems).

*The ultimate question, however, is whether content-oriented educators can mount successful process-oriented continuing education programs.* I am not optimistic that this can be done without some retreading of the older ones among us and some training of new leaders in the science of education. Fortunately, there are steadily widening opportunities for those who have committed themselves to an educational career in medicine to gain these special skills. For example, the Center for the Study of Medical Education now offers one-to two-year fellowships in educational research and development or, jointly with the College of Education, a graduate program leading to a Master of Education (in medicine) degree; with the support of the Bureau of State Services a more abbreviated six-week introduction to educational science is being developed specifically for individuals directing programs of continuing education; and with support of the National Institutes of Health's Division of Regional Medical Programs, a series of one-week programs is being planned to orient educational practitioners in medicine to some of the content of educational science in such specific fields as instructional systems and evaluation.

But those who direct programs of continuing medical education are not unlike the practitioners who are the objects of this effort. Until they recognize a need to know, it is unlikely that they will learn. If there is no perceived need to change, then neither new information nor vigorous instruction will alter their basic behavior. Instead, they will continue with increasing skill to do things which, in my view, have not proved to be very useful. They will go on developing attractive, even dazzling new programs, methods, and hardware for the communication of information; but they are unlikely to be any more successful in the future than they have been in the past in changing the behavior of recipients.

The gauntlet is down, the lists have been entered, and the battle for better continuing education can be joined. But as the pace quickens, it may be well for all to remember the prophetic words of Pogo: "We have met the enemy, and they are us."

#### Acknowledgments

The author wishes to acknowledge his debt to associates, past and present, whose influence upon the ideas presented in this paper has been great, even though it may be difficult to tease out the specific contributions of each. Among these, deserving special note are Dr. John Williamson; Miss Christine McGuire; Dr. Marshall Alexander; and, most recently, Mr. Michael Goran, a senior medical student at the University of Illinois.

#### REFERENCES

1. Youmans, J. B. Experience with a Postgraduate Course for Practitioners: Evaluation of Results. *J. Ass. Amer. Med. Coll.*, 10:154-173, 1935.
2. Williamson, J. W. Assessing Clinical Judgment. *J. Med. Educ.*, 40:180-187, 1965.
3. Storey, P. B. National Plan of the American Medical Association. *Amer. J. Cardiol.*, 17:893-898, 1966.
4. Bergman, A. B., Probstfield, B. A., and Wedgewood, R. J. Performance Analysis in Pediatric Practice. *J. Med. Educ.*, 42:249-253, 1967.
5. Greenhill, S., and Singh, H. J. Comparison of Profession Functions of Rural and Urban General Practitioners. *J. Med. Educ.*, 40:856-861, 1965.
6. Baker, A. S., Parrish, H. M., and Bishop, F. What Do General Practitioners Really Do in their Offices. Department of Community Health and Medical Practice, University of Missouri School of Medicine (multilithed).

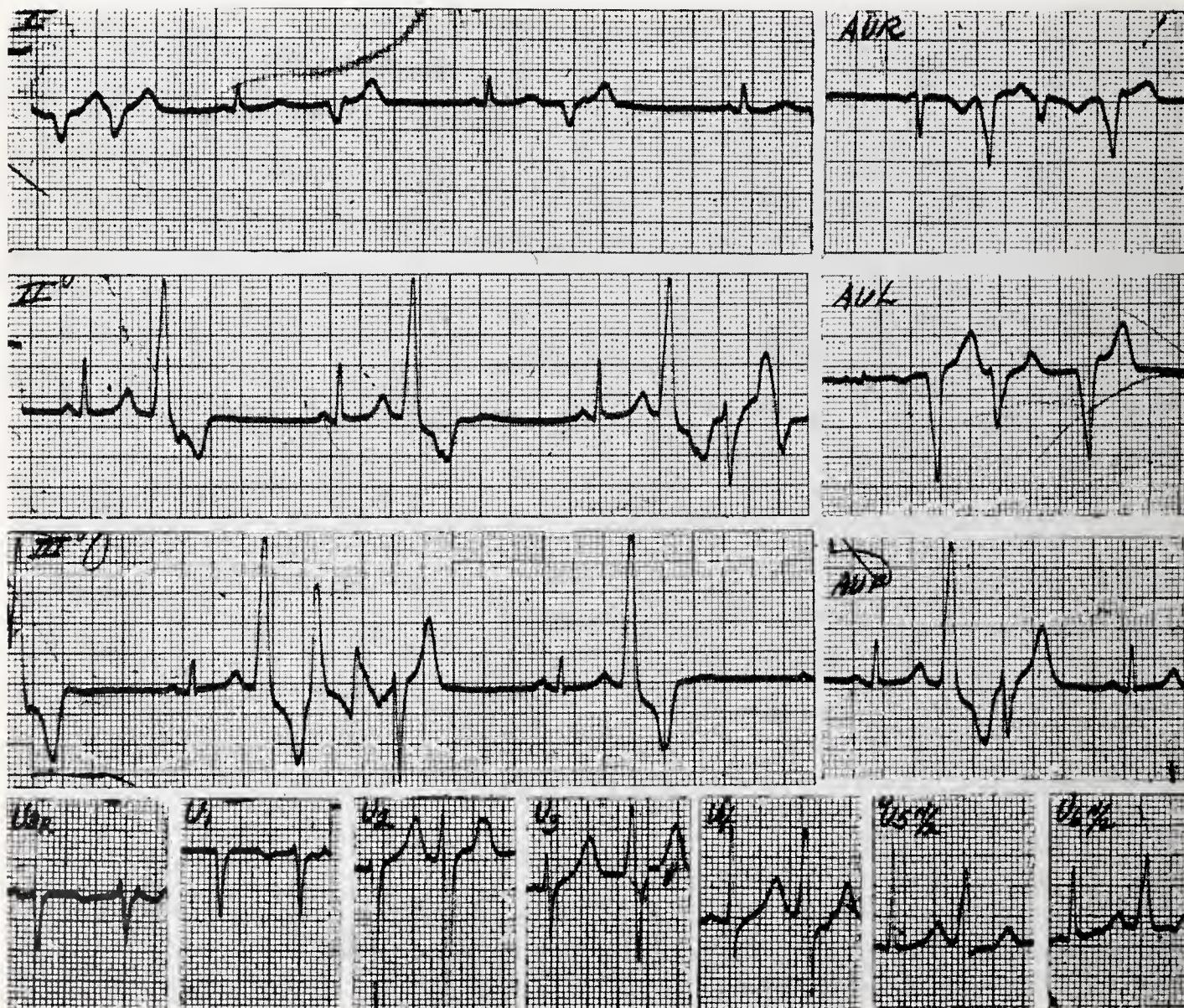
## ELECTROCARDIOGRAM

## OF THE MONTH



AGE: 63 SEX: M BUILD: Slender BLOOD PRESSURE: 120/75  
CARDIAC DIAGNOSIS: Undetermined  
OTHER DIAGNOSES: Headaches, etiology (?)  
MEDICATION: ??  
HISTORY: Bigeminal pulse, no history of cardiac disease

SEE ANSWER ON PAGE 132



The Department of Medicine, University of Arkansas Medical Center  
James S. Taylor, M.D., Professor of Medicine

# WHAT IS YOUR DIAGNOSIS?

Prepared by the  
Department of Radiology, University of Arkansas  
School of Medicine, Little Rock

SEE ANSWER ON PAGE 132



HISTORY: Nine month old Negro male chronically ill for the past six months. The wrist, ankles, and knees were enlarged and slightly tender.

## TYPHOID FEVER

Arkansas physicians are seeing fewer cases of typhoid fever, therefore it is increasingly important that cultural techniques be employed to have confirmatory evidence in each new case, as the 900 plus other Salmonella infections can give reactive Widal reactions which are presumptive evidence of typhoid fever, at best, and may be accounted for by typhoid immunization.

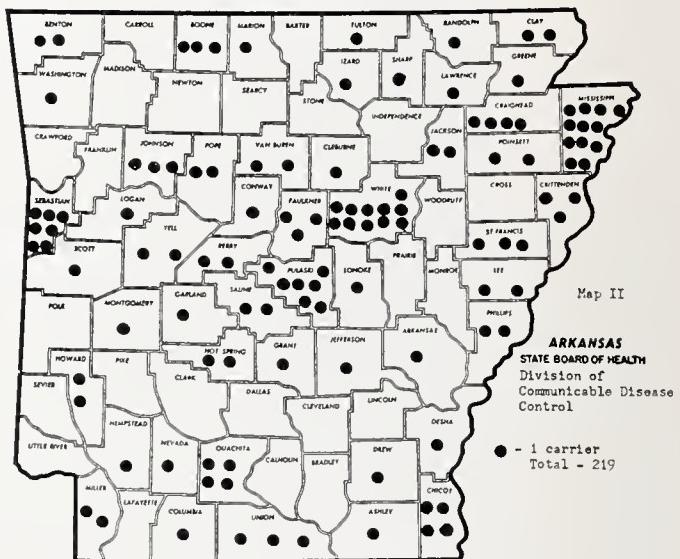
The Communicable Disease Control Division of the Arkansas State Department of Health has repeatedly emphasized the importance of having a definitive diagnosis for a case of typhoid fever since only by showing that the case and carrier have the same phage type can we be sure that the most probable source has been established and that epidemiological efforts may safely be terminated or that the known possibilities truly have been exhausted. Reported, verified cases are extensively investigated epidemiologically as promptly as possible not only to avoid repetition of sporadic cases but to avert an epidemic which could occur with a breakdown of the community sewerage system or water supply system even though both are considered adequate facilities.

The accompanying map No. 1 shows the geographic location of typhoid fever cases reported in Arkansas during 1966 and 161 days of 1967. Map No. 2 shows the usual residence of the known active typhoid carriers in Arkansas as of December 31, 1966. It should always be remembered that there are many carriers who have not been identified because of their rarely handling food and drink of others and their usual residing areas where adequate personal and community sanitation interrupts the fecal-oral cycle that is essential to the perpetuation of *Salmonella typhi*.

The recent gains have resulted from improved water systems and sewerage disposal systems, early and definitive diagnosis with prompt treatment and adequate follow up of cases, immunization of

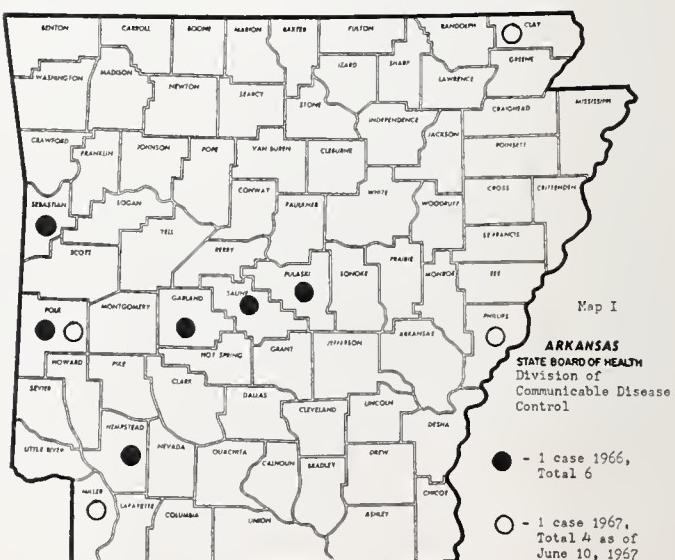
**NOTE:** A more extensive article appeared in the Journal of the Arkansas Medical Society, Vol. 62, No. 8 under this same heading in January 1966.

### TYPHOID CARRIERS ACTIVE IN ARKANSAS December 31, 1966



susceptibles in areas of endemic typhoid fever, continued search for new and surveillance of all active typhoid carriers, and the education of the public to know the need for these essentials and to demand constant availability and use of all these facilities. Continued efforts along these lines can eradicate this malady and hopefully prevent its re-introduction in the State and Nation.

### TYPHOID FEVER CASES REPORTED





## EDITORIAL

# Aldosterone in Cardiac and Hepatic Failure

Alfred Kahn, Jr., M.D.

The dramatic investigations of adrenal cortex hormones centered at first around the hydrocortisone-like substances, but it was well known that some substance or substances had an effect on salt and water metabolism; this was quite clear from studies in animals with extirpation of the adrenals and from patients with Addison's Disease. Finally, a substance was isolated from the adrenal with a salt water effect, and was called electrocortin, and which is now known as aldosterone. Aldosterone has been studied in relationship to edematous states, in addition to pure physiological and biochemical research.

Camargo, Dowdy, Hancock, and Luetscher (*Journal of Clinical Investigation*, Vol. 44, p. 356, March, 1965) have reported on aldosterone in patients with heart failure. Animal studies had previously indicated that the fluid retention of heart failure might in a large measure have been due to increased circulating aldosterone. Camargo et al. studies were to determine in human beings with heart failure the changes in aldosterone secretion, plasma clearance rate, and splanchnic extraction ratio. These findings were correlated with circulatory function. In all they studied 17 patients who had had heart failure. Measurements were made of the cardiac index, arterial O<sub>2</sub> saturation, A-V O<sub>2</sub> differences, right atrial pressure, right ventricular pressure, left ventricular pressure, and brachial artery pressure. These cases clearly showed the usual findings of failure with a low cardiac index in L/Min/M<sub>2</sub>, fair O<sub>2</sub> saturation of arteries, enhanced oxygen extraction, and tendency to elevated right ventricular and atrial pressures. After finding the above values on their patients, the same patients were studied for aldosterone secretion, aldosterone plasma clearance, aldosterone plasma, concentrate Na intake, urine Na, and urine K. The author's

studies showed an elevated plasma aldosterone concentration; this could, of course, be due to excessive secretion or decreased removal by the liver. Further analysis of the results indicated that only 5 cases of 17 showed increased secretion of aldosterone whereas the severe congestive failure cases showed a definite reduction in splanchnic (largely liver) removal of aldosterone. In other words, although secretion may be increased, a more consistent finding was failure to remove normal units of aldosterone. The authors postulated this was due to hepatic cellular dysfunction due to anoxia.

Tait, Bougas, Little, Tait, and Flood (*Journal of Clinical Endocrinology*, Vol. 25, p. 219, February, 1965) reported on "Splanchnic Extraction and Clearance of Aldosterone in Subjects with Minimal and Marked Cardiac Dysfunction." Using somewhat similar techniques to Camargo et al., they found that in patients with a normal cardiac output, and normal BSP extraction, almost all aldosterone is removed in one passage through the liver. Patients with minimal cardiac dysfunction showed a definite decrease in splanchnic aldosterone extraction. Patients with marked congestive failure had even less splanchnic removal of aldosterone than mild cases of failure. Tait et al. were not able to explain the cause of lowered splanchnic extraction of aldosterone in heart failure from their data.

The ascites of hepatic disease has been blamed on aldosterone. An experimental approach to this and a good bibliography has been presented in the *Journal of the American Medical Association* by LaLone Valiathan, and Ballinger (Vol. 187, p. 157, January 11, 1964). Using 9 mongrel dogs, the authors injected homogenates of muscle from a healthy canine donor, liver from a healthy canine donor, liver from an ascitic dog, and liver from an ascitic adrenolectomized dog. The results

## INFLAMMATION:

# A cellular fight for life

*A SYNTEX REPORT based on recently developed hypotheses about topical corticosteroids, including the cellular theories of inflammation by Thomas F. Dougherty, Ph.D., University of Utah.*

You are looking at a fibroblast fighting for life. This cell—one of the most common found in connective tissue—has literally been poisoned by cytotoxins released from other cells that have ruptured. Soon, if the abnormal activity of this fibroblast does not cease, it, too, will rupture and die—one more casualty in the inflammatory wave of destruction precipitated by injury.

Until a short time ago no one had ever witnessed such a scene at the cellular level. Now, through advanced cinemicrographic techniques, it is possible to view and photograph the inflammatory process as produced experimentally in living animal tissue. This method permits new insight into the mechanism of inflammation and the role of corticosteroids in therapeutic management. Equally important, these techniques shed new light on factors that may make one corticosteroid more effective than another—factors that can be correlated with other chemical, biologic, and clinical parameters.



### FORREST CITY, ARKANSAS

Physician wanted for position of Rating Specialist, Medical in the regional office of the Veterans Administration in Little Rock. The person who accepts this employment will share responsibility with others for determining the extent of physical disability of certain claimants and the effect of physical disability on employment. Responsibility also includes determination of the origin of certain diseases and injuries. Commencing salary is \$13,201 with periodic increases. Ideal working conditions and no night work. Physical demands for this employee are minimal as it is entirely office work. For more information contact: Mr. Roy R. Moore, Adjudication Officer, Veterans Administration Regional Office, Federal Office Building, Little Rock, Arkansas 72201. Telephone FR 2-4361.

GP wanted as associate to 40-year-old general practitioner. Alternate nights and week ends. Population 13,000, drawing area 20,000. 100 bed hospital. Good school system. Town in center of rapidly expanding industrial and agricultural area. Memphis one hour away. Contact: A. M. Bradley, M.D.

1740 Lindauer Road  
Post Office Box 70  
Forrest City, Arkansas

DUMAS, ARKANSAS. Office and equipment available for immediate possession—will sell or lease. Previously occupied by the late Dr. J. H. Hellums. Town of 4,200 with much larger trade territory. County hospital facilities—presently 35 beds being expanded to 55 beds. Five other physicians in town—adequate coverage for vacations and time off. Write or call Mrs. J. H. Hellums, Dumas, Arkansas. Telephone: EV 2-4900.

### SOUTHEAST ARKANSAS

Position in student health service. Prefer GP under forty who desires a career in student health service. Contact: Arkansas Medical Society, Post Office Box 1208, Fort Smith, Arkansas 72901.

A physician who does surgery and general practice is moving from town in southeast Arkansas and would like two G.P.'s to take over his office and practice. Population of town is 3,665. For more information contact: Physician Placement Service, Post Office Box 1208, Fort Smith, Arkansas 72901.

indicated that sodium and water retention increased following injection of homogenates of liver from a normal dog. The retention is much increased if the liver homogenate is from an ascitic dog. This result was abolished if the ascitic dog was adrenalectomized. Injection of muscle homogenate had little effect. Thus one could infer that aldosterone was the substance causing the sodium and water retention, and that it was present in the liver of animals made ascitic to a much more marked degree than in normals.

Aldosterone has been proved to be related to the water retention of both hepatic and cardiac diseases. The pathogenesis and the metabolic steps in this abnormality are still somewhat conjectural as are the interrelations of aldosterone and angiotensin (Journal of the American Medical Association, J. O. Davis, Vol. 188, p. 110, June, 1964), etc. Nevertheless, the overall understanding of salt water metabolism has been greatly clarified by the study of these disease states.

## RESOLUTIONS



WHEREAS, the passing from this life of our respected colleague, Dr. David T. Hyatt, has

caused the members of this Society to be saddened; and

WHEREAS, Dr. Hyatt has for many years practiced his chosen profession in a manner which inspired the confidence and devotion of his patients; and

WHEREAS, the Members of this Society wish to express their sense of loss and condolences to his family;

### BE IT THEREFORE RESOLVED:

THAT, a copy of this resolution be forwarded to Dr. Hyatt's family, and

THAT, a copy of this resolution be forwarded to the Journal of The Arkansas Medical Society for publication; and

THAT, this resolution be made a part of the permanent records of this Society.

By Action of the Memorials Committee

T. Duel Brown, M.D., Chairman

John McCollough Smith, M.D.

Lucas Byrd, M.D.

Approved by Society

June 6, 1967

WHEREAS, this Society notes with sincere sorrow the passing from this life of Gaston G. Fulmer, the Executive Secretary-Treasurer of the Society from 1947 until 1961, and

WHEREAS, Mr. Fulmer's loyal service to the betterment of the Society is recognized with grati-

### ANSWER—What's Your Diagnosis?

DIAGNOSIS: Rickets.

X-RAY FINDINGS: Widening of the epiphyseal plates of the distal femora. Irregular fraying of the epiphyseal line of the distal right distal tibia with cupping.

### ANSWER—Electrocardiogram of the Month

RATE: 70 RHYTHM: Sinus with frequent premature ventricular contractions

PR: .13 QRS: .06 QT: .40

SIGNIFICANT ABNORMALITIES: Very frequent multifocal premature ventricular contractions causing bigeminal rhythm in most of tracing. At times they occur in multifocal pairs or cause short bursts of ventricular tachycardia.

INTERPRETATION: Abnormal Arrhythmia as described above

COMMENT: The cause for the abnormal rhythm was not found. This type arrhythmia is usually associated with digitalis toxicity, but was not in this case.

tude by all of its members, and

WHEREAS, his outstanding devotion to the medical profession, his church and his community will long be remembered,

BE IT THEREFORE RESOLVED:

THAT, this resolution be made a part of the permanent records of this Society, and

THAT, a copy of this resolution be forwarded to The Journal of the Arkansas Medical Society for publication, and

THAT, a copy of this resolution be forwarded

to Mr. Fulmer's family as an expression of recognition for his many contributions to this organization, and as an expression of sympathy to his family on their great loss.

By Action of the Memorials Committee

T. Duel Brown, M.D., Chairman

John McCollough Smith, M.D.

Lucas Byrd, M.D.

Approved by

Executive Committee

June 21, 1967

## MEDICINE IN THE



### GRADUATION AT MEDICAL CENTER

LITTLE ROCK — Some 153 students at the University of Arkansas Medical Center received diplomas at the 89th annual graduation exercises at 4 p.m., Sunday (June 11) at the Robinson Memorial Auditorium.

Dr. Ray E. Brown, director of Duke University's Graduate Program in Hospital Administration and a leading national figure in hospital administration, education and health science facilities development, delivered the commencement address. He discussed "Medical Excellences Foster Medical Urgencies."

Dallas P. Raney, chairman of the University's Board of Trustees, conferred degrees and Dr. David W. Mullins, University president, presented diplomas to 87 graduates in the School of Medicine, 10 seniors in the School of Medical Technology, 16 School of Nursing students and 40 graduating seniors in the School of Pharmacy.

Dr. Charles R. Henry of Little Rock administered the Oath of Hippocrates to the new physicians.

Rev. Ralph S. Mann, pastor of the Rhodes Chapel and Silver Hill Methodist Churches, El Dorado, delivered the invocation and Rev. Leslie M. Riherd, pastor of the First Baptist Church in Newport, delivered the benediction. Both minis-

ters are fathers of graduating seniors in the School of Medicine.

Distinguished Service Awards were made to two former members of the medical school's voluntary faculty. Faculty gold keys, the most coveted honor awarded to senior students, were presented by deans of each of the schools.

Distinguished service awards were presented to Dr. S. T. Wallis Cull, a retired Little Rock internist, and to the widow of the late Dr. David T. Hyatt, a Little Rock cardiologist who died recently.

The awards for service and leadership, annually granted to outstanding members of the voluntary faculty, were presented during graduation exercises.

Dr. Cull, a native of Baltimore, Md., joined the staff of the Arkansas institution in 1928 as professor of therapeutics. He was appointed professor of medicine in 1946 and served as acting head of the department of medicine in 1948.

Dr. Cull received an A.B. degree from Princeton University in 1914 and the M.D. degree in 1921 from Johns Hopkins University. He also completed postgraduate studies at the Columbia University College of Physicians and Surgeons in 1935 and at the British Postgraduate Medical School in London in 1936. He holds membership

in Alpha Omega Alpha, honor medical society, and Phi Beta Kappa, honorary scholastic society.

Dr. Hyatt had served on the voluntary faculty for 45 years and was associate professor of medicine on the honorary faculty at the time of his death.

A native of Monticello, Dr. Hyatt received a bachelor's degree from Washington and Lee University in 1916 and the doctor of medicine degree from Johns Hopkins University School of Medicine in 1921. He also was a diplomate of the American Board of Internal Medicine and a member of the American Heart Association and the American College of Chest Physicians.

### THE MONTH IN WASHINGTON

Washington, D. C.—The Department of Health, Education and Welfare is making a broad study of prescription drugs which will be the basis of a recommendation on whether their costs should be covered by medicare when they are used outside a hospital.

HEW Secretary John W. Gardner appointed a task force of HEW officials to evaluate the study and make the recommendation.

"Prescription drugs are an essential element of modern medical care," Gardner said. "In the last twenty-five years we have witnessed greater advances in the use of drugs than in the whole previous history of medicine. Today drugs and biologicals make possible the prevention and successful treatment of illnesses that were serious and frequently fatal."

"Yet for many older Americans the cost of needed drugs prescribed by a physician is a heavy burden, representing 15 to 20 per cent of their medical care costs. Many older Americans find themselves with limited financial resources at the very time that age brings an increasing incidence of chronic disease and greater needs for medical care, including prescription drugs."

President Johnson directed last January that Gardner "undertake immediately a comprehensive study of the problems of including the cost of prescription drugs under medicare." Studies on some aspects of the question were started then and are near completion. Other specific studies are in various stages of progress.

But Congress may decide the issue before the full study is completed. The Senate Finance Committee will hold hearings this summer on such a medicare extension.

Dr. Philip R. Lee, Assistant HEW Secretary and Chairman of the task force, said that even if the study is incomplete, HEW will take a stand anyway when the Senate Finance Committee takes up the legislation.

One bill would finance medicare coverage of drugs by increasing from \$3 to \$4 the cost of monthly premiums for the voluntary doctor bills insurance program (Plan B) for persons 65 and over. Sponsored by Sen. Joseph M. Montoya (D., N.M.) the bill would provide that generic drugs rather than trade name products be used whenever possible.

Another bill is sponsored by Chairman Russell B. Long, (D., La.), the Senate's leading critic of the drug industry. It would spur generic purchasing for all federally-connected welfare programs.

"The task force will examine a number of factors which are closely involved with the use of prescription drugs and with present and proposed methods of purchasing them," Lee said. "Many of these factors concern not only drug costs—and who pays them—but also the quality of medicare care."

Among the major areas listed for task force study:

1. Present patterns of drug prescription by physicians.
2. Present patterns of prescription drug use and expense by patients.
3. Present resources used to meet drug costs (including personal resources, aid from relatives, insurance, government assistance).
4. Present drug cost coverage programs (including federal, state, commercial insurance, union, and foreign programs).
5. Distribution systems (including independent pharmacies, central pharmacies, mail-order distribution, physician dispensing, and hospital dispensing).
6. Reimbursement factors (including determination of costs; co-insurance; deductibles; and limitations on dollar costs, drug quantities, and drug types).
7. Accounting methods (including nomenclature, coding, data processing).
8. Pharmacological aspects (including generic equivalents vs. clinical equivalents).
9. Clinical aspects (including formulary systems).
10. Legal and fiscal aspects.
11. Impact of proposed methods of purchasing

prescription drugs on costs and quality of patient care, on medical profession, on pharmacy profession, on drug industry, on government.

\* \* \* \*

Surgeon General William H. Stewart says that measles (Rubella) should be eradicated this year but other cripplers and killers like venereal disease and cancer still baffle researchers.

"This year, 1967, may well go down in history as the year of measles eradication in the United States," Stewart told a House Appropriations Subcommittee, in testimony recently published.

Stewart said the measles vaccine, licensed four years ago, is "bringing the disease to the vanishing point." The Public Health Service researchers now are working with an "experimental vaccine" trying to conquer German measles, he said.

Other health problems, such as cancer, heart disease and gonorrhea, continue, however, to pose numerous research problems, Stewart reported.

Stewart told the Appropriations Subcommittee that the "fastest rising causes of death and disability" in this nation are emphysema and other chronic respiratory diseases. He said deaths from emphysema and chronic bronchitis have increased about nine times in the last 20 years, causing more than 60,000 deaths a year.

The federal health official, who estimated that some 300,000 people die each year indirectly from smoking, also reported that a new less dangerous cigarette may be developed.

"There is reason to believe that the development of a less hazardous cigarette is potentially within reach," he said. But he put no timetable on development of this type of cigarette.

\* \* \* \*

The American Medical Association supports all except one provision of legislation (S. 780) that would expand the federal government's role in the federal-state program to curb air pollution.

In a letter to the Senate Subcommittee on Air and Water Pollution, Dr. F. J. L. Blasingame, executive vice president of the AMA, pointed out that the AMA has been directing the attention of physicians and other health workers to the problems of air pollution through a series of meetings and its publications. He also noted that the AMA has supported such legislation in past years.

"In spite of past legislation and on-going federal, state and local programs which are carried

on in cooperation with private industry, the American Medical Association recognizes that air pollution continues as a major environmental problem," Dr. Blasingame said. "Increased program emphasis on research and development in techniques of air pollution control and abatement is worthy of the support of the medical profession."

"The bill before you contains one provision which we cannot support. Section 107 of S.780 would require the Secretary of HEW to establish emission standards for certain industries. On the basis of present information and understanding of the relationship between emissions and the effect it has on surrounding air, such a requirement is unrealistic and would not accomplish its intended purpose."

#### **NEW BLOOD BANK ORGANIZATION**

Blood bank personnel in the mid-South area formed a new organization in Memphis in March 1967. The name of the new group is the "Mid-South Blood Bank Organization." The organization will meet five times a year on the third Thursday of January, March, May, September and November at 7:30 p.m. in the St. Jude Hospital. It is composed of blood bank workers from the various hospitals and private blood banks in the mid-South area around Memphis. The purpose of the organization is to advance education in the field, provide a forum for communication, and to foster good relations between workers in blood banks. The meetings and membership are open to all persons interested in this exciting and rapidly advancing field. Officers of the organization are:

President—Dr. J. D. Mashburn

Vice-President—Mrs. Pat Dardano

Secretary—Mr. Lloyd Kerr

Treasurer—Mr. Douglas Salter

At the May meeting, Dr. Robert Summitt, from the University of Tennessee gave a presentation of normal and abnormal karyotypes in man.

#### **RESULTS OF THE NATIONAL INTERN MATCHING PROGRAM FOR 1967**

A record 8,000 medical graduates participated in the sixteenth annual National Intern Matching Program (NIMP) in 1967. The proportion of interns matched to federal service hospitals and hospitals with minor teaching affiliations has remained relatively constant over the past eight years. Hospitals with major affiliations have

drawn increasingly larger proportions of NIMP participants.

Figure 1 depicts the percentage of all NIMP participants matched to hospitals on the basis of their teaching affiliation status in the years 1952 through 1967. This illustration clearly shows the rise in proportion of graduating medical students choosing major affiliated hospitals, and the concomitant decline in the proportion selecting nonaffiliated hospitals.

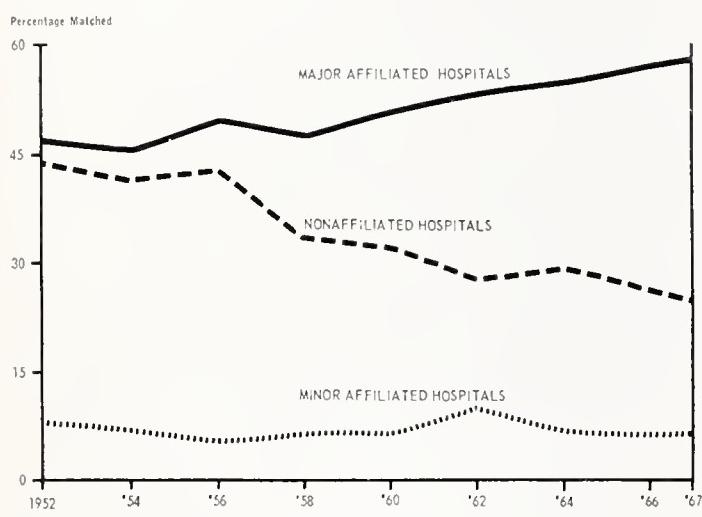


FIGURE 1

Percentage of NIMP Participants Matched to Major Affiliated Hospitals, Minor Affiliated Hospitals and Nonaffiliated Hospitals, 1952-67.

The gradual trend shift depicted in Figure 1 can also be seen in the distribution of NIMP participants in the three most recent years as shown in Table 1. The dramatic effects of this trend are seen in a direct comparison of the NIMP program of 1967 with the NIMP program of 1953. Major teaching hospitals in 1967 showed a gain in the proportion of interns received of 14.1 per cent over the 1953 level. Nonaffiliated hospitals showed an 11.0 per cent decline in the proportion of interns received in 1967 as compared with the 1953 level. The slight shifts in the proportion of

interns matched to federal service hospitals and minor teaching hospitals appear to be random fluctuations that do not reflect a change in trend.

Table 2 compares the relative success of hospitals in obtaining interns through the NIMP for hospitals with major affiliation and for hospitals with no medical school affiliation. In 1967, 77 per cent of hospitals with a major affiliation received more than one-half of their desired total intern quota through NIMP as compared with 65 per cent receiving more than one-half of the interns sought in 1953. The proportion of nonaffiliated hospitals receiving more than one-half of the interns sought through the NIMP program dropped from 32 per cent in 1953 to 24 per cent in 1967.

TABLE 2  
MATCHING EXPERIENCE OF HOSPITALS WITH AND WITHOUT  
MAJOR MEDICAL SCHOOL AFFILIATIONS

Per Cent of Interns Obtained Through NIMP	1953		1967	
	Hospitals	Interns	Hospitals	Interns
<b>Major Medical School Affiliations</b>				
Through NIMP	Number	%	Number	Number
50-100	97	65.0	2,859	2,354
0-49	52	35.0	1,017	289
Total	149	100.0	3,876	2,643
<b>No Medical School Affiliations</b>				
50-100	186	32.3	2,105	1,660
0-49	390	67.7	3,444	478
Total	576	100.0	5,549	2,138
<b>Major Medical School Affiliations</b>				
Through NIMP	Number	%	Number	Number
50-100	149	77.2	5,190	4,384
0-49	44	22.8	1,836	249
Total	193	100.0	6,026	4,633
<b>No Medical School Affiliations</b>				
50-100	110	24.0	1,735	1,443
0-49	349	76.0	4,537	505
Total	459	100.0	6,272	1,948



### Nomograms for Use in Determining Pulmonary Compliance and Nonelastic Resistance

S. T. Chiang and H. A. Lyons (450 Clarkson Ave, Brooklyn, NY) *Dis Chest* 51:18-21 (Jan) 1967

Nomograms for determining pulmonary compliance and nonelastic resistance of the respiratory system are presented. The nomograms were constructed by using paired parameters and using the slopes of their linear relations or the angles of inclination of their lines of the graphs. The nomograms described make the calculations in the studies of pulmonary compliance and nonelastic resistance comparatively very simple.

TABLE 1  
EXPERIENCE OF NIMP PARTICIPANTS ACCORDING TO MATCHING RESULTS  
Total NIMP Participants

	1953	1965	1966	1967
NIMP Participants Matched to:				
Major Teaching Hospital	2,643	43.8	4,218	55.5
Nonaffiliated Hospital	2,138	35.4	2,053	27.0
Minor Teaching Hospital	473	7.9	507	6.7
Federal Service	490	8.1	564	7.4
Total Matched	5,744	95.2	7,342	96.6
Unmatched Total Participants	289	4.8	256	3.4
	100.0	100.0	100.0	100.0



### **What It Needs From the Medical Society and How It Works for the Medical Society\***

It is indeed a thrill to be able to talk to you today—notwithstanding the fact that you're a pretty formidable group. Individually it would be easy and I'd have no qualms at all about talking to you at length, but collectively, well—you're pretty impressive.

It's wonderful to have such a meeting as this, and I thank you from each woman here. There's nothing like actual association to bring about a closer feeling between the society and the auxiliary. Letters are good, financial subsidy is fine, advisory committees are excellent, and all of these you give us in full measure, but there is nothing like personally "rubbing elbows" to bring about a more closely knit bond between two organizations. In addition to personally meeting your members, which is the most important thing, it gives us a working knowledge of the Society, it adds stature to our Auxiliary to have been invited, and it gives us a sense of actually "Belonging"—of really being an adjunct to the Society.

I was glad to be asked to tell you how the Auxiliary works for you and what it needs from you, for perhaps this will help answer that question so often asked "What does the Auxiliary do?"

You are really our only reason for being—without a Society there would not be an Auxiliary. Our objectives are but an extension of your own and our purpose, simply stated, is to help you get done those things which you'd like to have done—and feel should be done—but don't have time to do yourself. Our By-Laws state our purpose: To extend the aims of the medical profession to all organizations which look to the advancement of health and health education; to cultivate friendly relations and promote mutual

understanding among physicians' families; and finally, and perhaps foremost, to participate in any endeavor upon the request of the Arkansas Medical Society. I submit to you that we can do as little or as much as you wish us to do. On the county and state level you have in us a vast potential in helping get your program over to the community. Let us act as your emissary to the people in your county. You are in a position to see, hear, and experience the health needs there before anyone else, but you may be too busy to do something about them. Yet as the doctor you are the one your community expects to be responsible for the whole health of your own. We can and will help you with this by helping get the AMA's vast wealth of health education material into the hands of the people for whom it was intended. You have given us the best medical care in the world; the Auxiliary feels it has a joint responsibility with you to create and maintain the best health environment in the world.

Ours is not just a social organization—although that too is part of our purpose, for how else can we "cultivate friendly relations among physicians families"—but rather ours is a service organization—service in a way that only we, who have the vast resources of the AMA at our disposal, can be of service to our communities. We have at our fingertips the best health education material, many times the only material, available on some health problems, and we are remiss indeed if we do not see that this is put to use in our local areas where it is needed. This the auxiliary can and does do.

So much for the philosophy of auxiliary: Now specifically how do we work for the Society? What do we do?

We have certain special funds which we support:

Getting top priority is your AMA Education and Research Foundation (AMA-ERF), funds for which can be returned as an unrestricted grant to the University of Arkansas School of Medicine, can be applied to the Loan Guarantee Program to help provide loans to medical students, interns and residents so they may initiate and continue their training, or can be used for the AMA's new Institute for Biomedical Research in Chicago. \$1,500 of the \$6,444 check you presented to Dr. Shorey at Convention in May was contributed by our county and state auxiliaries. From the Loan Guarantee fund last year 126 future Arkansas

\*Speech given at the Winter Meeting of the Arkansas Medical Society in December, 1966 by Mrs. John McCullough Smith, of Little Rock, Arkansas.

physicians borrowed \$147,400 last year.

We have our own special state loan funds covering the entire scope of health careers: the Ilse F. Oates Student Loan Fund for medical Students; the Martha Harding Gann Fund for nurses; and the Dr. and Mrs. W. R. Brookshier Student Loan Fund for the paramedical career students. We're proud of these funds and would welcome your memorial gifts and contributions to them. And we hope you'll tell prospective students about them.

Recruitment for health careers receives much of our attention. We help organize and furnish program material for Health Career Clubs in high schools. In cooperation with the county societies we help conduct health career days in the schools and organize hospital tours for students and parents. This year each Guidance Councilor in the elementary, junior and senior high schools in Arkansas will receive a copy of "Horizons Unlimited", the AMA's latest health career paperback book, and to it we have added a supplement of facilities in Arkansas. Each county auxiliary is making every effort to see that names of the Health Education teachers in their county are sent to the AMA Health Education Service for Schools and Colleges so that they will receive its monthly bulletin which contains abstracts of pertinent health articles not commonly available through other sources.

One of important areas in which we work is legislation. Concerned women can accomplish much and certainly anything which pertains to the health and welfare of our communities is our concern. Not to replace the work you do—but to supplement it and aid.

In International Health Activities we collect drug samples, medical and surgical supplies for World Medical Relief, Inc. One county collected from doctors and shipped 1,500 pounds of drugs last year. Bandages are knitted and hospital jackets made from old white shirts. We have been asked to stress to our doctors that they not give prescription type drug samples to patient to be mailed to non-medical missionary friends overseas, lest they be given by non-medical personnel who do not know the dangerous side effects some medicines might have.

Public Relations and Community Service committees in the counties have the know-how to secure and distribute the AMA's unlimited program material for use in civic clubs there. This

year they have available for use in PTA's and federated women's clubs packaged programs on Health Careers, Health Education in the Schools, Mental Health, Venereal Disease, Immunization, and Safety. Each program has suggested film, pamphlets, and fact sheets for distribution, and even prepared speeches the doctor's wife might use in the event a doctor is not able to attend to conduct the program. This is the most thorough programming material available today and we are very proud it is our national auxiliary's brain-child, and feel it will be well used and received in the state during the coming year.

Other committees which indicate areas in which we work are: Mental Health, Safety and Disaster Preparedness, and Rural Health (Auxiliary members have long acted as judges in the Rural Community Improvement (RCI) yearly contest to select the state's outstanding rural community). Our Erle Chambers Memorial Library Committee has for many years conducted drives for books, magazines, and contributions for magazines for the state sanatoria at Booneville and McRae. Of course, most of you are familiar with our Doctor's Day Committee, from whence cometh the red carnations and doctor's day celebrations around March 30 when wives honor their husbands!

Not every auxiliary does everything, but certainly each one does something, and our cumulative work at the end of the year is most impressive and Arkansas fares well as reports come in at national convention. The fact that we've had one national president, Mrs. Mason Lawson, Little Rock, and now have a 1st Vice-President, Mrs. C. C. Long, Ozark, reflects the respect in which our auxiliary is held nationally.

#### What does the Auxiliary need from the Society?

You've met one of the biggest needs today—a closer liaison between the two groups. Become more aware of us and of our potential to help you. Become more knowledgeable about us. If you have an Auxiliary in your county, be sure that each Society member knows who the president is. Appoint an advisor to the Auxiliary and have him report occasionally on its work. Perhaps the President could read her report to you at the end of the year.

Remember our loan funds when you're thinking of memorials to friends; continue to buy our AMA-ERF cards.

Recruitment for health careers is a prime re-

sponsibility for each of us. I would hope that together we might take the initiative in creating in Arkansas a Health Careers Council to coordinate the work of all paramedical groups in recruitment in high schools and colleges. Other states have such a Council and I believe this is the best method of securing for you the paramedical help you will need in the future.

We've talked about how you could help us if you had an Auxiliary. Now if you don't have one, see if there are enough wives in your area to form one and Amelia Martin, President-Elect, and I will come running to help them get organized. Collectively they can do more than as individuals, though there is much members-at-large can do to promote auxiliary work, but if it seems unfeasible to have auxiliary in your county, your wife may become a member-at-large by paying the \$4.00 yearly dues, which will entitle her to all the privileges of full membership, including the right to hold office (one of our vice-presidents, Nonnie Jackson, Newport, is a member-at-large) and to attend all meetings of the state convention. With her dues comes also the yearly subscription to "MD's Wife", the bi-monthly magazine of which we are so proud, and the three issues of our state publication Ark-Map.

Our State Treasurer, Mrs. W. Myers Smith, is here today and would be delighted to take any memberships-at-large if there are wives here who would like to join, if there's a husband who would like to pay his wife's membership now. If you'd rather talk to her about it, pick up one of the copies of MD's Wife we made available for you today to take home to her so that she can see first hand what our magazine is like. Tell her about us and ask her if she wouldn't like to be one of the 90,000 women comprising some 1,200 local auxiliaries in the United States, joined together with the common goal of working with the Society to help create the best health environment for the people of our communities. You have found in your profession the answer to your urge to do something for others. Most women search for something to do to have that sense of

doing something to help someone. What more altruistic goal could one seek than medical auxiliary work.

Call on us when there's something we can help you do. Help us to help you accomplish some of your goals.



## BOOK REVIEWS

*PATHOLOGIC PHYSIOLOGY—MECHANISMS OF DISEASE*; William A. Sodeman, M.D., Sc.D., F.A.C.P. and William A. Sodeman, Jr., M.D., W. B. Saunders Company, Philadelphia and London, 1967. Contributors: Bernard J. Alpers, William B. Bean, Norman Brachfeld, Sir F. Macfarlane Burnet, William B. Castle, Arthur C. Corcoran, Bertram D. Dinman, Richard H. Freyberg, Benjamin R. Gendel, Franz Goldstein, Edgar Hull, Franz J. Ingelfinger, James H. Jandl, Franklin D. Johnston, John H. Killough, Joseph B. Kirsner, Maurice E. Krahl, John S. LaDue, Elliott I. Mancall, C. Thorpe Ray, Edward C. Reifenstein, Henry T. Ricketts, Joseph T. Roberts, Leon Schiff, John H. Seabury, William B. Sherman, William A. Sodeman, William A. Sodeman, Jr., John P. Utz, John M. Weller.

This excellent text is in its fourth edition and is considered a truly standard authority in its field. Different chapters are written by various authorities all well-known and all outstanding. The purpose of the book is as defined in the title Pathologic Physiology. In other words, how disease alters body function. The text is excellent. There are excellent bibliographies. To this reviewer's taste, there are not enough photographs and charts. This book is highly recommended to medical students and practicing physicians in all fields.

*TEXTBOOK OF MEDICINE*, Edited by Paul B. Beeson, M.D. and Walsh McDermott, M.D., Associate Editors Alexander G. Bearn, M.D., Philip K. Bondy, M.D., Carl V. Moore, M.D., Marvin H. Slesinger, M.D., Fred Plum, M.D. Twelfth Edition, W. B. Saunders Company. Philadelphia and London, 1967.

This is a textbook of Beeson and McDermott. This text is probably the outstanding English language text on general medicine. It is edited by Dr. Beeson, who is now Professor of Medicine at the University of Oxford and Dr. McDermott, who is Professor of Public Health at Cornell University Medical College.

The book is written by various authorities. The bibliography acknowledging the various portions is adequate. There are virtually no illustrations or charts. All in all, this text has to be considered uniquely outstanding in the field of general medicine. It is highly recommended to medical students, house staff and practicing physicians.

# PHYSICIANS' DIRECTORY

J. B. STEWART, M.D.

603 LEXINGTON AVENUE

RALPH G. KRAMER, M.D.

FORT SMITH, ARKANSAS

E. C. MOULTON, JR., M.D.\*  
S. R. McEWEN, M.D.\*

C. S. LANE, JR., M.D.\*\*  
T. H. RAYMOND, M.D.\*\*

**DRS. MOULTON, LANE, McEWEN, and RAYMOND**

\*Diplomates American Board of Ophthalmology  
\*\*Diplomates American Board of Otolaryngology

1214 NORTH "B" STREET

FORT SMITH, ARKANSAS

ROY E. SCHIRMER  
PH.C., M.D., F.A.A.A.  
ALLERGIC DISEASES

Lexington Ave. & South "I" St. Fort Smith, Ark.

L. MURPHEY HENRY, B.A., M.D.\*

LOUISE M. HENRY, B.A., M.D.\*

**OPHTHALMOLOGY**

\*American Board of Ophthalmology

405 FIRST NATIONAL BANK BUILDING

FORT SMITH, ARKANSAS

D. W. GOLDSTEIN, M.D.

A. C. BRADFORD, M.D.

**DERMATOLOGY**

COOPER CLINIC BUILDING  
100 SOUTH 14th STREET

FORT SMITH, ARKANSAS  
SUunset 3-1183

WILLIAM B. STANTON, M.D.\*

BYRON L. BROWN, M.D.  
Office: SUunset 3-0225

JOHN W. WIDEMAN, M.D.\*

**ORTHOPAEDIC SURGERY**

\*Diplomate of American Board

300 N. Greenwood  
Fort Smith, Arkansas

**DRS. BROOKSHER,\* ROGERS\* and DODD**

\*Diplomates, American Board of Radiology  
Radiology—Nuclear Medicine

318 North Greenwood Avenue

Fort Smith, Arkansas

J. F. KELSEY, M.D.

ROBERT L. SHERMAN, M.D.

W. P. PHILLIPS, M.D.

**DRS. KELSEY, SHERMAN & PHILLIPS**

Diplomates, American Board of Obstetrics and Gynecology

408 South 16th Street

Telephone SU 5-2411

Fort Smith, Arkansas

September, 1967

# THE JOURNAL OF THE Arkansas MEDICAL SOCIETY

Vol. 64 No. 4

FORT SMITH, ARKANSAS

Medical School Library  
University of California  
San Francisco, California

54122

J.C. MEDICAL CENTER LIBRARY

OCT 9 1967

San Francisco 94122



Among the adjuncts to the physician's skill

## Darvon® Compound-65

Each Pulvule® contains 65 mg. propoxyphene hydrochloride, 227 mg. aspirin, 162 mg. phenacetin, and 32.4 mg. caffeine.



Additional information available to the medical profession upon request.  
ELI LILLY AND COMPANY, INDIANAPOLIS, INDIANA 46206  
701133

# Dilantin® (diphenylhydantoin)

PARKE-DAVIS

**In untold thousands of  
epileptic patients...  
Dilantin has been, and  
continues to be, the  
bedrock of therapy.**

DILANTIN is useful in the treatment of grand mal epilepsy and certain other convulsive states. Its use will prevent or greatly reduce the incidence and severity of convulsive seizures in a substantial percentage of epileptic patients, without the hypnotic and narcotizing effects of many anti-convulsant drugs.

**PRECAUTIONS:** Periodic examination of the blood is advisable. Nystagmus in combination with diplopia and ataxia indicates dosage should be reduced. The possibility of toxic effects during pregnancy has not been explored.

**ADVERSE REACTIONS:** Allergic phenomena such as polyarthropathy, fever, skin eruptions, and acute generalized morbilliform eruptions with or without fever. Rarely, dermatitis goes on to exfoliation with hepatitis, and further dosage is contraindicated. Gingival hypertrophy, hirsutism, and excessive motor activity are occasionally encountered. During initial treatment, side effects may include gastric distress, nausea, weight loss, nervousness, sleeplessness, feeling of unsteadiness. Macrocytosis, megaloblastic anemia, leukopenia, granulocytopenia, thrombocytopenia, pancytopenia, agranulocytosis, and aplastic anemia have been reported. Nystagmus, lymphadenopathy, lupus erythematosus, erythema multiforme (Stevens-Johnson syndrome), and a syndrome resembling infectious mononucleosis with jaundice have occurred.

DILANTIN is supplied in several forms including Kapseals® containing 0.1 Gm. and 0.03 Gm. diphenylhydantoin sodium.

Parke, Davis & Company, Detroit, Michigan 48232

The color combinations of the banded capsules are Parke-Davis trademarks. The orange-banded white capsule identifies Parke-Davis 0.1 Gm. diphenylhydantoin sodium; the pink-banded white capsule 0.03 Gm. diphenylhydantoin sodium.

**PARKE-DAVIS**

015R67





■ to help restore and stabilize  
the intestinal flora

■ for fever blisters and canker  
sores of herpetic origin

LACTINEX contains both *Lactobacillus acidophilus* and *L. bulgaricus* in a standardized viable culture, with the naturally occurring metabolic products produced by these organisms.

First introduced to help restore the flora of the intestinal tract in infants and adults,<sup>1, 2, 3, 4</sup> LACTINEX has also been shown to be useful in the treatment of fever blisters and canker sores of herpetic origin.<sup>5, 6, 7, 8</sup>

No untoward side effects have been reported to date.

*Literature on indications and dosage available on request.*

*References:*

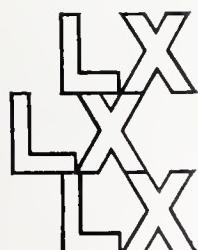
- (1) Siver, R. H.: CMD, 21:109, September 1954. (2) Frykman, H. H.: Minn. Med., 38:19-27, January 1955. (3) McGivney, J.: Tex. State Jour. Med., 51:16-18, January 1955. (4) Quehl, T. M.: Jour. of Florida Acad. Gen. Prac., 15:15-16, October 1965. (5) Weekes, D. J.: N.Y. State Jour. Med., 58:2672-2673, August 1958. (6) Weekes, D. J.: EENT Digest, 25:47-59, December 1963. (7) Abbott, P. L.: Jour. Oral Surg., Anes., & Hosp. Dental Serv., 310-312, July 1961. (8) Rapoport, L. and Levine, W. I.: Oral Surg., Oral Med. & Oral Path., 20:591-593, November 1965.

**HYNSON, WESTCOTT  
& DUNNING, INC.**



BALTIMORE, MARYLAND 21201

(LX04)



**THE  
JOURNAL OF THE  
Arkansas  
MEDICAL SOCIETY**

Owned by

**THE ARKANSAS MEDICAL SOCIETY  
And Published Under Direction of the Council**

---

**ALFRED KAHN, JR., M.D., Editor  
1300 West Sixth Street Little Rock, Arkansas**  
**MR. PAUL C. SCHAEFER, Business Manager  
218 Kelley Bldg. Fort Smith, Arkansas**  
**LITTLE ROCK BUSINESS OFFICE  
114 E. Second St. Little Rock, Arkansas**

---

OFFICERS OF THE ARKANSAS MEDICAL SOCIETY	
JOSEPH A. NORTON, President	Little Rock
H. W. THOMAS, President-Elect	Dermott
JEROME LEVY, First Vice President	Little Rock
DAVID H. PONTIUS, Second Vice President	West Memphis
GEORGE F. WYNNE, Third Vice President	Warren
ELVIN SHUFFIELD, Secretary	Little Rock
W. R. BROOKSHER, Secretary Emeritus	Fort Smith
BEN N. SALTZMAN, Treasurer	Mountain Home
JOHN P. PRICE, Speaker, House of Delegates	Monticello
AMAIL CHUDY, Vice Speaker, House of Delegates	North Little Rock
ALFRED KAHN, JR., Journal Editor	Little Rock
JAMES M. KOLB, SR., Delegate to AMA	Clarksville
JACK KENNEDY, Delegate to AMA	Arkadelphia
C. C. LONG, Alternate Delegate to AMA	Ozark
ALFRED KAHN, JR., Alternate Delegate to AMA	Little Rock
MR. PAUL C. SCHAEFER, Executive Vice President, P.O. Box 1208	Fort Smith

---

**COUNCILORS**

First District	ELDON FAIRLEY	Osceola
Second District	B. P. RANEY	Jonesboro
Third District	PAUL GRAY	Batesville
Fourth District	HUGH R. EDWARDS	Searcy
Fifth District	PAUL MILLAR	Stuttgart
Sixth District	L. J. P. BELL	Helena
Seventh District	T. E. TOWNSEND	Pine Bluff
Eighth District	LEE B. PARKER	McGehee
Ninth District	KENNETH R. DUZAN	El Dorado
Tenth District	PAUL SIZEMORE	Magnolia
	KARLTON H. KEMP	Texarkana
	JOHN P. WOOD	Mena
	JACK KENNEDY	Arkadelphia
	ROBERT F. McCRARY	Hot Springs
	WILLIAM PAYTON KOLB	Little Rock
	JAMES R. MORRISON	Little Rock
	STANLEY APPLEGATE	Springdale
	ROSS FOWLER	Harrison
	C. C. LONG	Ozark
	A. S. KOENIG	Fort Smith

---

The Advertising policy of this JOURNAL is governed by the PRINCIPLES OF ADVERTISING of the State Medical Journal Advertising Bureau, Inc., by the Advertising Committee of the Bureau and by the Council of the Arkansas Medical Society.

*EXCLUSIVE PUBLICATION—Articles are accepted for publication on the condition that they are contributed solely to this JOURNAL.*

*COPYRIGHT 1967 — By the JOURNAL of the Arkansas Medical Society.*

*NEWS—Our readers are requested to send in items of news, also marked copies of newspapers containing matter of interest to the membership.*

**SCIENTIFIC ARTICLES**

A Curable Case of Severe Hypertension	141
John E. Allen, M.D. and	
John D. McCracken, M.D.	
Mesenteric Venous Occlusion	143
George Roberson, M.D.	
The Use of Psychotropic Drugs in General Practice	149
Raymond W. Waggoner, M.D.	

**FORUM FROM THE DEPT.  
OF OBGYN**

Obstetrical Management of Hydrocephalus	155
W. Frank Armbrust, M.D.	

**FEATURES**

What Is Your Diagnosis?	159
Electrocardiogram	160
Arkansas Public Health at a Glance	161
Editorial	162
Medicine in the News	163
Personal and News Items	170
Proceedings of Societies	171
New Members	172
Book Reviews	172
Tuberculosis Abstracts	173

Notice on Form 3579-P to be sent to Arkansas Medical Society, 218 Kelley Building, Fort Smith, Arkansas 72901. Published monthly under direction of the Council, Arkansas Medical Society, Vol. 64, No. 4. Subscriptions \$3.00 a year. Single copies 50 cents. Entered as second class matter, May 1, 1955, in the post office at Little Rock, Arkansas, under the Act of Congress of March, 1879. Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized August 1, 1918. Second-class postage paid at Little Rock, Arkansas.

## A Curable Case of Severe Hypertension

John E. Allen, M.D.\* and John D. McCracken, M.D.\*

**R**enal ischemia secondary to renal artery stenosis is a well recognized cause of hypertension,<sup>1</sup> and can usually be cured by operation.<sup>2,3</sup> Arterial hypertension due to pheochromocytoma is relieved in most patients by complete excision of the tumor. Harrison and associates<sup>4</sup> have reported a patient in whom renal ischemia developed or persisted after removal of three pheochromocytomas, requiring nephrectomy for relief of hypertension.

Garrett and associates<sup>5</sup> have reported a patient in whom a pheochromocytoma was recognized during an exploration for renal artery stenosis. Removal of the tumor and revascularization of the kidney with endarterectomy and patch graft angioplasty produced gratifying results.

The purpose of this report is to emphasize the value of arteriography in diagnosis and treatment of hypertension.

### REPORT OF CASE

A 41-year-old salesman was admitted to the Baptist Medical Center, Little Rock, on July 6, 1966, for treatment of severe hypertension. This patient had a four year history of a somewhat labile, but progressive diastolic hypertension. The patient had had recurrent dizzy spells and severe headaches. He had been recently discharged from another hospital, where his pressure had been measured up to 300/180, while taking one aldomet (methyldopa) and one aldonil (methyldopa and hydrochlorothiazide) tablet, four times a day.

Past history revealed the patient had been extensively worked up for a possible pheochromocytoma. On the basis of a positive regitine (phentolamine) test and three elevated catecholamine determinations, he was explored in June, 1964. Complete exploration of the retroperitoneum and peritoneal cavity revealed no evidence of tu-

mor. Complete evaluation was again carried out in September, 1965. VMA determinations and a repeat regitine test were normal. At that time, pressures were elevated to 212/120.

Physical examination revealed a blood pressure of 300/160 in both arms. The pulse rate was 115, and respiration 20 per minute. The heart was not enlarged and the lungs were clear. The abdominal examination was negative and no bruit was present. The extremities were normal and peripheral pulses were palpable.

The hemogram, blood urea nitrogen and serum electrolytes were within normal limits. There was 2+ proteinuria. The electrocardiogram revealed left ventricular hypertrophy. A chest x-ray was essentially negative. Retrograde aortography revealed severe left renal artery stenosis (fig. 1). The pyelogram demonstrated delayed and increased opacification of the left collecting system.

On July 7, 1966, celiotomy was performed thru a midline incision and both renal arteries and the aorta were exposed. Direct pressure determinations revealed a gradient of 110 mm. Mercury between the aorta and the left renal artery (fig. 2).



FIGURE 1

\*Little Rock Surgery Clinic, 5512 West Markham, Little Rock, Arkansas.

## A CURABLE CASE OF SEVERE HYPERTENSION

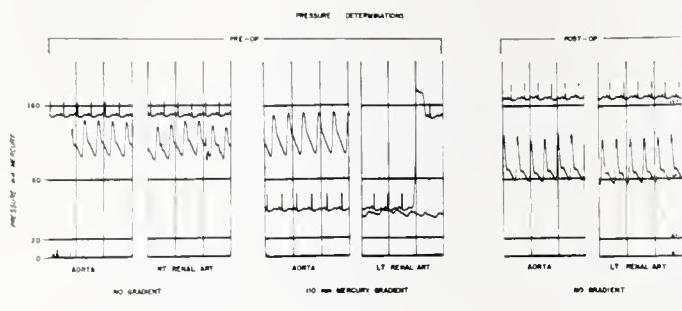


FIGURE 2

The renal artery stenosis was secondary to narrowing of a 1.5 cm. segment and bypass was performed with a 7 mm. knitted dacron graft, relieving the gradient (fig. 2, 3).

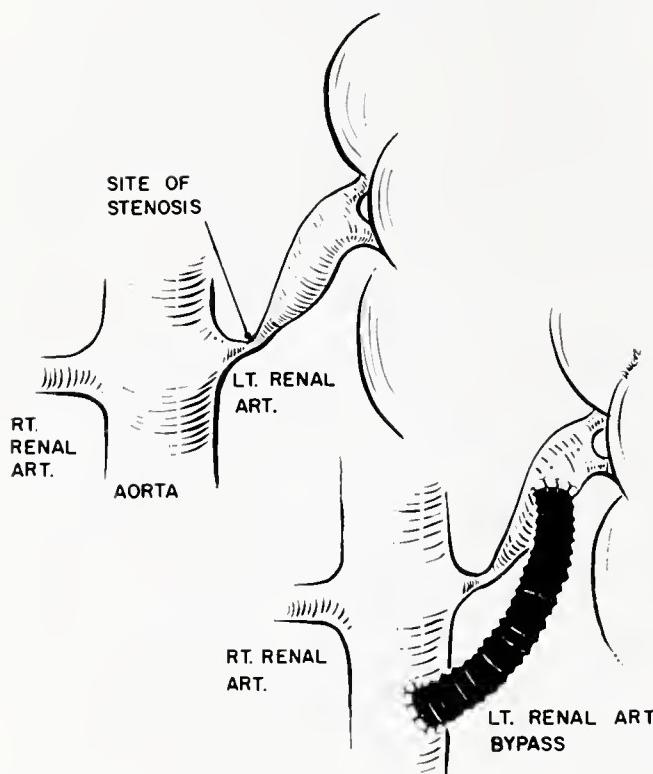


FIGURE 3

The patient's postoperative course was complicated by a brief period of hypotension which responded to intravenous fluids. His pressure ranged from 120/70 to 160/100 postoperatively without medication. He has remained asymptomatic since discharge, and a translumbar aortogram demonstrated a patent graft (fig. 4).

### COMMENTS

Abdominal aortography is not generally performed when pheochromocytoma is suspected. False positive tests (Catecholamine and phentolamine) resulted in a negative exploration in this patient in 1964. Aortography should have been performed to rule out arterial ischemia following this. Delay in excretion of the dye,<sup>6</sup> increased con-



FIGURE 4

centration of the dye,<sup>6</sup> and underfilling of the calyceal system<sup>7</sup> in pyelography are suggestive, if not diagnostic, of renal artery ischemia. Successful treatment of renal artery ischemia should employ revascularization to utilize the kidney which has been spared from hypertensive changes.<sup>3</sup>

### SUMMARY

A patient with previously suspected pheochromocytoma and severe hypertension was correctly diagnosed as having renal artery stenosis. Revascularization produced gratifying results. Patients with hypertension should have aortography performed to aid in the diagnosis of this curable type of disease.

### BIBLIOGRAPHY

1. Goldblatt, H., et al.: Studies on Experimental Hypertension: I. Production of Persistent Elevation of Systolic Pressure by Means of Renal Ischemia. *J. Exp. Med.* 59:347, 1934.
2. Boyd, C. H. and Lewis, L. G.: Nephrectomy for Arterial Hypertension. *J. Urol.* 39: 627, 1938.
3. DeBakey, M. E., et al.: Lesions of Renal Artery: Surgical Technic and Results. *Amer. J. Surg.* 107:84, 1964.
4. Harrison, F. H., Gardner, F. H., and Dammin, G. J.: Note on Pheochromocytoma and Renal Hypertension. *J. Urol.* 79:173, 1958.
5. H. Edward Garrett, M.D., Russell Scott, Jr., James F. Howell, M.D., and Michael E. DeBakey, M.D.: Pheochromocytoma and Renal Artery Stenosis: Surgical Treatment of Secondary Hypertension. *Arch. Surg.* Vol. 90, Jan. 1965.
6. Hodson, C. J., Hypertension: The Kidney in Hypertension. *Proc. Roy. Soc. Med.*, 55, 583, 1962.
7. Whitley, J., Whitcofski, M. S., Quinn, J. L., Mescham, I.: The Radiologic Diagnosis of Renovascular Hypertension. *Radiology*, 78, 414, 1962.

# MESENTERIC VENOUS OCCLUSION\*

George Roberson, M.D.\*\*

The purpose of this paper is to describe the clinical picture associated with mesenteric vein thrombosis, to briefly review the literature related to the problem and to report two illustrative cases.

Mesenteric vascular occlusion has often been described as an "acute abdominal catastrophe" and characterized by sudden abdominal pain, nausea, vomiting, shock and bizarre symptoms.<sup>2,7,10,22</sup> Perhaps this is because of the grave clinical picture frequently associated with gangrenous bowel in the peritoneal cavity secondary to arterial embolism. There is much written about mesenteric vascular occlusion, but frequently without differentiating the clinical course, symptomatology and prognosis in regards to whether the origin of the condition was purely arterial, purely venous or a combination of both. Some investigators have noted a difference in arterial and venous mesenteric occlusion and in 1935, Donaldson and Stout described them as separate entities.<sup>6</sup> They stated that "The fact that the possibility of an occurrence of a slowly progressing condition of mesenteric thrombosis which in the early stages is most thoroughly amenable to surgery does not register in the minds of the profession generally, is to a certain extent responsible for the inaccuracy of diagnosis and high mortality connected with the condition." Mortality for this condition has usually been reported in the range of 70% as recorded by Berry in 12 patients with 13 cases of mesenteric venous occlusion of the "agnogenic" variety.<sup>1</sup> However, Jenson and Smith reported a striking difference in mortality for pure venous infarction (11.1%) and pure arterial infarction (88.6%).<sup>4</sup> They attributed this to the sudden onset and more massive nature of the arterial type and the frequency of pre-existing cardiovascular disease in the arterial occlusions (74%) as compared to the venous occlusions (22%).

Mesenteric vascular occlusion has been called the masquerader of the abdomen as it can obvious-

ly present a variable clinical picture that is confusing to the one who thinks of only the dramatic arterial form. This report emphasizes the less dramatic but equally serious form of mesenteric vascular occlusion, so-called "agnogenic mesenteric venous occlusion."<sup>1</sup>

Two case histories illustrating the condition are presented.

## CASE REPORTS

Case 1: L.R., a 45-year-old white male, was referred to Dr. Harwell Wilson and admitted to the Baptist Memorial Hospital on March 2, 1963, with a 3-day history of cramping epigastric and right upper quadrant pain, increasing in severity the past two days. The referring physician stated that a mild epidemic of viral intestinal infection had been producing similar symptoms in several patients in the community. The patient was referred when the symptoms did not subside after 48 hours and the pain began to increase significantly. He had had no bowel action or flatus the past 24 hours and vomited once on the day of admission. There had been no previous pain, melena, food intolerance or genitourinary symptoms. Past history revealed occasional mild phlebitis in lower legs associated with varicose veins. Patient had also undergone craniotomy for a pseudo tumor of the brain, the exact cause of the swelling of the brain being uncertain. The patient's older brother had undergone vena caval ligation for pulmonary embolism secondary to phlebitis in the legs. Physical examination revealed T 96.2, blood pressure 160/98, P-92. The patient was obese, pale and in acute distress. Chest was normal to examination. The abdomen was obese but thought to be slightly distended. Bowel sounds were hypoactive and there was marked tenderness in the epigastrium and right upper quadrant. There were no masses and the liver and spleen were not palpable. Rectal revealed some blood on the examining finger. Pedal pulses were normal. Laboratory studies revealed a leukocyte count of 18,000 with 93% segmented forms, HCT 46 and serum amylase 80. A plain film of the abdomen showed some loops of mildly distended small bowel containing gas. The patient complained of severe abdominal pain through the

\*From the Department of Surgery, University of Tennessee, the Baptist Memorial Hospital and the William F. Bowld Hospital, Memphis, Tennessee.

\*\*Surgical Resident, University of Tennessee, City of Memphis Hospitals, Memphis, Tennessee.

night. Though muscle guarding was absent there was tenderness in the right upper quadrant to palpation. The patient experienced a most uncomfortable night though he received 100 mg. of Demerol for pain every three hours. The next morning the leukocyte count had risen to 23,000 and the serum amylase was in the normal range, 46. Because of the continued severe generalized abdominal pain, exploratory laparotomy was felt mandatory. At this time there was no localized tenderness, no rigidity, and no palpable masses. He was explored through a right paramedian incision 15 hours after admission. A large amount of blood tinged fluid escaped on opening the peritoneum. There was seen a large loop of black bowel and six feet of gangrenous lower jejunum and upper ileum was resected. Clots extruded from the veins on cutting across the mesentery. End to end anastomosis of small bowel was quickly accomplished. Heparin was begun five hours postoperatively and dicoumerol seven days postoperatively. Anticoagulant therapy was continued for one year. The patient was well when last seen in September, 1965.

Case 2: N. G., a 43-year-old white female was admitted to the Bowld Hospital on August 24, 1965, with a history of developing gas, belching, and epigastric soreness while eating sandwiches at "drive-ins" two weeks previously. The flatulence and pain increased causing the patient to consult her local doctor. She was treated with symptomatic medication which gave relief. About six days prior to admission she vomited once with the onset of the menstrual period which was not considered unusual. The flow was normal and lasted three days. She felt relatively well again until three days prior to admission when she awoke with pain and gas in the epigastrium again which shifted to the left upper quadrant. The patient was hospitalized by her local doctor and given intravenous fluids, antibiotics and rest. She did not improve and was referred to Dr. Harwell Wilson in Memphis. An upper gastrointestinal X-ray study made eight hours before the patient was referred revealed only a small hiatal hernia. Pain on admission was described as constant. She stated that she experienced pain in the left side when the transporting ambulance had hit a bump. Past history revealed indigestion relieved by antacids, though she frequently regurgitated milkshakes. There was food intolerance to numerous things, however, there was no history of jaundice

or gastrointestinal bleeding. Birth control pills had been taken for abnormal periods for the past six months. There was no history of phlebitis but she had undergone varicose vein surgery on the legs several years prior to admission. On examination the temperature was 98, pulse 112, respiration 36, and blood pressure 140/60. The patient was very obese and complained constantly of severe pain in the left upper quadrant. The chest examination was normal. Slight distention was apparent as well as marked obesity. There was a suggestive tender left upper quadrant mass. Guarding was noted, confined mainly to the left upper quadrant. The rest of the abdomen was relatively soft though there was generalized rebound tenderness referred to the left upper quadrant. Bowel sounds were hypoactive. The pelvic and rectal examinations were negative. The HCT was 50, total white count 32,700 with 93% segmented forms and one band form. Urine, sp. gr. 1.031 and serum amylase 32. An admission film of the abdomen was postponed until the next morning, 12 hours after admission, in order to allow the barium to pass. A perinephric abscess was suspected and an intravenous pyelogram was to be done if the renal areas were clear of contrast media. However, the film the next morning showed retention of the barium in the stomach, duodenum and upper jejunum that had been given 24 hours previously. There was some gas in the small bowel but gas was also present in the ascending and transverse colon and rectum. An intravenous pyelogram was done that afternoon revealing normal kidney function. Barium was noted still retained in the stomach, duodenum and upper jejunum. The distal portion of the media outlined an abnormal mucosal pattern of thick and edematous folds and faded into a cone shaped column of barium. On retrospect, a thin line of gas in a short segment of thick edematous bowel could be seen in the left upper quadrant on the intravenous pyelogram films which was present on the earlier abdominal film. It had not changed position though the patient had been moved several times during the day. She was operated upon about 24 hours after admission and opened through a left paramedian incision. A large loop of gangrenous jejunum was found walled off by omentum in the left upper quadrant. A total of 37 inches of bowel was resected. Clots extruded from the veins on clamping across the mesentery. The mesentery was very edematous.

Pathological examination showed occlusion of mesenteric veins with thrombus but no organic occlusion of the arteries was demonstrated. Post-operatively anticoagulant therapy was not used in this patient. One liter of 6% Dextran (ave. molecular wt.—75,000) was given in saline daily for three days. The convalescence was uneventful and she was discharged on the fifteenth post-operative day.

### ETIOLOGY

An inciting factor for the venous thrombosis can be found in the majority of cases. A small number seem to be idiopathic. Johnson and Baggenstoss in 1949 reported 99 cases of mesenteric venous occlusion and were able to find a suitable cause for occlusion in 91 of the cases.<sup>16</sup> The following outline lists some of the factors to which the condition of mesenteric venous thrombosis has been attributed.

#### I. Infection

##### A. Peritonitis<sup>16</sup>

1. Appendicitis
2. Ruptured Viscus
3. Pelvic Inflammatory Disease

##### B. Chronic Ulcerative Colitis with abscess

##### C. Enteritis

##### D. Pancreatitis

#### II. Neoplasms

##### A. Intra-abdominal<sup>16</sup>

1. Pancreas
2. Colon

##### B. Extra-abdominal

#### III. Trauma

##### A. Abdominal Surgical Procedure

#### IV. Systemic or Metabolic Disease

##### A. Causing Portal Hypertension

1. Cirrhosis
2. Congestive Splenomegaly
3. Cardiac Decompensation

##### B. Blood Dyscrasias

1. Polycythemia vera
2. Abnormal Clotting Mechanism
3. Sickle Cell Anemia

##### C. Diabetes Mellitus

#### V. Toxic

##### A. Drugs

1. Oral Contraceptives<sup>15</sup>

##### B. Absorption of Toxic Chemicals<sup>6</sup> from GI Tract

#### VI. Mechanical

##### A. Sufficient pressure produced to occlude veins but not arteries

1. Volvulus
2. Intussusception
3. Hernia
4. Paralytic Ileus

#### VII. Idiopathic or Agnogenic

The relationship of the progesterone agent to the thrombosis in the second case is not definite. The usual site is iliofemoral thrombosis. Mesenteric venous thrombosis in a patient taking a synthetic progesterone has been reported before by Reed and Coon in 1963.<sup>15</sup> They state that mesenteric venous thrombosis in a young healthy female is very rare. It is interesting that other drugs have also been under suspicion, such as penicillin, digitalis and mercurial diuretics.<sup>1</sup>

From 1961 to July 1963, there were 347 instances of thrombophlebitis with 35 cases of fatal pulmonary embolism and an estimated two million users of oral contraceptives. It has also been estimated that approximately 1,000 cases of idiopathic thrombophlebitis could be expected per million women per year in the child bearing age with about 11 fatalities per million from thromboembolism per year.<sup>8</sup> The best that can be deduced from present information is that the incidence is apparently very low. Most recommend avoiding use of the drug in those patients with a past history of phlebitis.

#### INCIDENCE

There is a wide variation in reported incidence at various institutions due to the variability of frequency of surgical exploration and/or post-mortem examinations. Uricchio reported a combined incidence of arterial and venous occlusions of 0.003% of total hospital admissions.<sup>2</sup> Berry reported an incidence of 0.02% of all surgical admissions for the agnogenic or idiopathic variety of venous thrombosis and 0.09% for all varieties of mesenteric venous thrombosis.

#### CLINICAL PICTURE

This has frequently been combined with the arterial occlusive catastrophe. The time between onset of symptoms and the development of a seriously ill patient with arterial occlusion is a matter of 6-18 hours.<sup>6</sup> In exclusively the agnogenic type of venous occlusion Berry reported an average of 6.9 days in 12 cases between time of onset of symptoms and admission to the hospital. There was an average of 8.8 days between time of onset to surgery. One of our cases had symptoms for three days prior to admission and one for two weeks prior to admission. This points up the pro-

dromal period characteristic of agnogenic or idiopathic mesenteric venous thrombosis. This is usually a period of slowly progressive vague abdominal discomfort. After several days a patient presents with severe abdominal pain that requires large and frequent doses of narcotics for relief. This was evident in our case and has been noted in numerous reports before.<sup>1,4,6,7,12</sup>

Acute symptoms are primarily abdominal pain, nausea and/or vomiting and constipation. The pain may be colicky and intermittent or as signs of peritonitis progress, it may become rather constant and more severe. Vomiting does not always occur but is present in about half the cases.<sup>1,10</sup> Vomiting is more common with arterial occlusion, perhaps because of the relatively sudden onset.<sup>10</sup> Constipation is usually a later sign after development of ileus.

Physical signs usually show a low grade temperature elevation of between 100 and 101. Shock is decidedly more common in arterial occlusion (47%) than venous occlusion (7%) according to Whittaker and Pemberton<sup>10</sup> and is a late and grave sign.

The abdomen may show a moderate amount of distention due to edematous and fluid filled loops of bowel. It lacks the tympany of an ordinary ileus or obstruction. The abdomen may be acutely tender over the loop of involved bowel with rebound tenderness elsewhere. However, it has been frequently noted how soft the abdominal wall remains without marked rigidity. According to other's experience, a mass is seldom palpable as was the case in patient two. One may be palpable in 5-10% of the cases according to Shackleford.<sup>22</sup> Blood may be noted in the stool in some cases but there is seldom gross bleeding. Bowel sounds vary from increased activity to a silent abdomen, depending on the stage of the disease. When there is no fever the white count is low and the patient is developing the condition, active bowel sounds are likely to be heard. After there has been enough irritation to give signs of peritonitis the bowel sounds become quiet.

The most useful laboratory test is the total white count and differential. This varies between 18,000 to 35,000 with an average of about 20,000 for venous occlusion<sup>10</sup> and 27,000 for arterial occlusion.

In our two cases the hematocrit was also elevated, probably as a result of loss of fluid into

the peritoneal cavity and intestinal wall. Diagnostic peritoneal taps have been suggested by Gray and Amador in 1958 as a useful procedure to differentiate this condition from acute pancreatitis.<sup>9</sup> The fluid they tapped from a patient with supposed pancreatitis was brownish-red but, (1) had a mild fecal odor and (2) E. coli cultures were positive (and the organisms presumably could be seen on Gram stain). The amylase level was 1,690 Somogyi units while the serum level was zero. They cited Ellison in a personal communication who felt that elevation of peritoneal fluid levels of amylase above 1,000 units is more suggestive of necrotic intestine than pancreatitis.

A serum level of zero amylase has been thought to be indicative of massive pancreatic necrosis, however, if the major route of absorption were blocked (portal or superior mesenteric vein) then there would likely be a low serum level.

Combined with clinical judgment this and other findings would probably be useful in determining treatment. One might be hard put at times though to say for sure the tip of the needle was not within the lumen of a loop of intestine.

Various X-ray findings have been reported—none diagnostic—but all useful. Friman-Dahl has reported use of oral barium in some cases.<sup>18</sup> He noted a remarkable retention of contrast media in the involved loops. The small intestine was not as dilated as in pure mechanical obstruction and the mucosal pattern showed thickening and rigidity due to the edema of the bowel wall. Re-examination even the next day showed continued retention and stereotyped markings in the nearly motionless bowel. This finding was noted in case two. This same principle was noted by Nelson and Eggleston<sup>17</sup> in 1960 on plain films of the abdomen. They pointed out that in the usual paralytic ileus, the air and fluid contents obey the laws of gravity and shift with the patient. They reported two patients who showed a “rigid-loop” of narrow intraluminal gas which did not change when the position of the patient changed. Another roentgenologic observation has been localized distention down to the region of the splenic flexure, simulating a mechanical obstruction.<sup>19</sup> The extent of the distention was relative to the distribution of the superior mesenteric vein and its tributaries. Subsequent barium enema reveals no obstructing lesion. As noted above, not every case shows marked distention but this may occur. Stewart reviewed the American and British litera-

ture in 1963 and found 10 cases of known portal gas embolism and added three of his own.<sup>5</sup> None of the cases survived. It was reported in both arterial and venous occlusions. It must be differentiated from gas in the biliary tree as seen in gall stone ileus. The anatomical distribution of the two systems are the same but gas in the biliary system tends to be central (common duct, gallbladder) while gas in the portal vein tends to be peripheral in a fine reticular pattern. The difference is theorized to be on the basis of the difference of direction of flow of the two systems. The fourteenth case of portal vein gas was reported by Pagan-Carlo in 1964 and also terminated fatally.<sup>20</sup>

#### TREATMENT

The obvious primary therapy is surgical correction by resection and reanastomosis.

Whether or not anticoagulation is indicated in the postoperative period has not been definitely established. Berry concluded that immediate postoperative anticoagulation would probably lower mortality.<sup>1</sup> Jenson and Smith, however, could demonstrate no statistical difference in mortality of their patients given adequate anticoagulant therapy and those not so treated.<sup>4</sup> Of interest, it must be noted that mesenteric infarction has been reported due to mesenteric hematoma secondary to anticoagulant therapy.<sup>14</sup>

A more logical approach to the problem would seem to be to eliminate underlying inciting factors (as listed in etiology, e.g., polycythemia vera, CHF, etc.) rather than anticoagulating all patients. Anticoagulation should probably be strongly considered for those patients with previous episodes of phlebitis.

A still different approach was used on our second patient on the basis of recent reports in the literature on the antithrombotic properties of "clinical" dextran. This patient was given one liter of 6% dextran in saline daily for three days postoperatively.

Bryant<sup>13</sup> showed that clinical dextran which has an average molecular weight of 75,000 had a significant effect in reducing the thrombotic rate in a standard dog preparation. Moncrief has demonstrated its effect in thrombus propagation prevention in dog's jugular veins initiated by a standard electric current. They theorized that the dextran molecule coats the endothelium and impedes the flow of injury current. Also the electro-negative charge of the cellular elements are increased causing repelling action.<sup>3</sup> He also has shown that

clinical dextran (ave. molecular wt. 75,000) has greater specificity in thrombus inhibition than the larger weight or lesser weight dextrans.<sup>21</sup>

The effective dose or duration of therapy has not been established. Just-Viera and Yeager state that dextran 75,000 offered protection from thrombosis that had statistical significance in dogs, persisted for 24 hours and resulted after administration of only one dose of dextran 75,000 equivalent to 2% of body weight.<sup>11</sup>

Antibacterial therapy is indicated as well as proper fluid management.

#### SUMMARY

Mesenteric venous occlusive disease is seldom diagnosed preoperatively and probably less frequently recognized than arterial occlusions. Thus, mortality can be high unless appropriate surgical intervention is carried out early. The onset of mesenteric venous occlusions usually occurs over a period of several days. Arterial occlusions are usually rapid and involve a larger segment of bowel from the start.

Diagnosis is aided by an awareness of the possibility of gangrenous bowel in a patient with a several day history of vague abdominal complaints. Abdominal findings are not as striking as are the patients complaints of pain. Large doses of opiates are required for short periods of relief. X-ray examination is helpful if on repeat films, after changing the patients position, there can be identified a stationary loop of bowel, the above mentioned "rigid-loop-sign."

#### BIBLIOGRAPHY

1. Berry, F. B. and Bougas, J. A.: Agnogenic Venous Mesenteric Thrombosis, *Ann. Surg.*, 132:450, 1950.
2. Uricchio, J. F., Calenda, D. G., Freedman, D.: Mesenteric Vascular Occlusion, *Ann. Surg.*, 139:206, 1954.
3. Moncrief, J. A., Darin, J. C., Canizaro, P. C., Sawyer, R. B.: Use of Dextran to Prevent Arterial and Venous Thrombosis, *Ann. Surg.*, 158:553, 1963.
4. Jensen, C. B., Smith, G. A.: Clinical Study of 51 Cases of Mesenteric Infarction, *Surgery*, 40:930, 1956.
5. Stewart, J. O. R.: Portal Gas Embolism: A Prognostic Sign in Mesenteric Vascular Occlusion, *Brit. Med. J.*, 5341:1328, 1963.
6. Donaldson, J. K., Stout, B. F.: Mesenteric Thrombosis, *Amer. J. Surg.*, 29:208, 1935.
7. Farha, G. J. and Robinson, F. W.: Mesenteric Thrombosis. A Diagnostic Challenge, *Amer. J. Surg.*, 108:47, 1964.
8. Editorial: Oral Contraceptives and Venous Thrombosis, *JAMA*, 185:131, 1967.

## MESENTERIC VENOUS OCCLUSION

9. Gray, E. B. and Amador, E.: Acute Mesenteric Venous Thrombosis Simulating Acute Pancreatitis: The Value of Peritoneal Fluid Analysis, *JAMA*, 167:1734, 1958.
10. Whittaker, L. D. and Pemberton, J. deJ.: Mesenteric Vascular Occlusion, *JAMA*, 111:21, 1938.
11. Just-Viera, J. O. and Yeager, G. H.: Protection from Thrombosis in Large Veins, *Surg. Gyn. & Ob.*, 118:354, 1960.
12. Gillespie, G.: Mesenteric Thrombosis: Diagnostic Suggestions, *Amer. Surg.*, 27:156, 1961.
13. Bryant, M. F., et al.: Study of the Antithrombotic Properties of Dextrans of Large Molecular Weights, *J. Cardiov. Surg.*, 5:48, 1964.
14. Chalnay, P., Vichard, P. H.: A Complication of Anticoagulant Treatment: Intestinal Infarct Caused by Mesenteric Hematoma, *Presse. Med.*, 70:2654, 1962.
15. Reed, D. L. and Coon, W. W.: Thromboembolism in Patients Receiving Progesterone Drugs, *New Eng. J. Med.*, 269:622, 1963.
16. Johnson, C. C. and Baggenstoss, A. H.: Mesenteric Vascular Occlusion: I. 99 Cases of Occlusion of Veins. II. 60 Cases of Occlusion of Arteries and 12 Cases of Occlusion of Arteries and Veins, *Proc. Staff Meet., Mayo Clin.*, 24:628, 1949.
17. Nelson, S. W. and Eggleston, W.: Findings on Plain X-rays of the Abdomen of Mesenteric Vascular Occlusion with Possible New Sign of Mesenteric Vascular Occlusion, *Amer. J. Roent.*, 83:886, 1960.
18. Frimann-Dahl, J.: Roentgenologic Exam in Mesenteric Thrombosis, *Amer. J. Roent.*, 64:610, 1950.
19. Harrington, L. A.: Mesenteric Thrombosis, *Amer. J. Roent.*, 58:637, 1947.
20. Pagan-Carlo, J., DeMouy, E. H.: Hepatoportal Pneumatosis with Mesenteric Venous Thrombosis in an Infant, *Amer. J. Roent.*, 91:699, 1964.
21. Sawyer, R. B. and Moncrief, J. A.: Dextran Specificity in Thrombin Inhibition, *Arch. Surg.*, 90:562, 1965.
22. Shackelford, R. T.: *Surgery of the Alimentary Tract*, Philadelphia: W. B. Saunders Co., 1955.



### Treatment of Disseminated Melanoma by Systemic Melphalan, Methotrexate, and Autogenous Bone Marrow Transplants: Experience With 114 Patients

I. M. Ariel and G. T. Pack (New York Medical College, New York) *Cancer* 20:77-85 (Jan) 1967  
One hundred-fourteen patients suffering from disseminated melanoma were treated by combined chemotherapy—phenylalanine mustard (melphalan) and methotrexate plus autogenous bone marrow transfusion. Symptomatic response was noted in 68% of the patients. Objective evidence of response included decrease of hepatomegaly, temporary decrease or disappearance of cutaneous and subcutaneous nodules and shrinkage of metastases in the lymph nodes and lung. The major complication was leukopenia, observed in 63%. The addition of methotrexate to the therapeutic regimen imposes an increased risk on the patients, many of whom are already seriously ill. Although a slightly more salutary result was obtained with the combined regimen, it was not great enough to warrant the addition of methotrexate to phenylalanine mustard administration in view of the accompanying hazards.

### Cholecystokinin—Pancreozymin (CCK-PZ)

E. Jorpes and V. Mutt (Karolinska institutet, Stockholm) *Nord Med* 77:237-242 (Feb. 23) 1967

The isolation of cholecystokinin, from dog intestinal mucosa, to a homogeneous polypeptide with an activity of 3,000 Ivy dog units/mg is described. During all purification steps, pancreozymin activity of the preparations runs parallel to the cholecystokinin activity; the activity per milligram of substance of the final preparation is 10,000 times higher than in Harper and Raper's original samples. The authors conclude that both activities are exerted by a single hormone. The different clinical applications of CCK-PZ in cholecystography and the cholangiography techniques and in the combined secretin-pancreozymin test for diagnosis of chronic pancreatitis and cancer of the pancreas and in the biliary system are discussed. In 1955 a preparation of 22 Ivy dog units of cholecystokinin/mg was introduced in Sweden to replace the fat meal in the cholecystography technique. A sample with 250 Ivy dog units/mg has been widely used since 1962, mostly in biliary surgery.

# The Use of Psychotropic Drugs in General Practice

Raymond W. Waggoner, M.D., Sc.D.\*

There are few drugs which have received more attention in the public press than those which affect the central nervous system. The most recent being Cylert or magnesium pemoline by Abbott. By the same token, I doubt if any group of drugs other than, very possibly, the antibiotics have been more frequently misused. This is not difficult to understand because of the high incidence of emotional disorder. Many patients with physical disease have a significant emotional reaction to their disease and could be benefited by a reduction of their anxiety and fear. During the past decade or so, there has been a remarkable increase of interest by the medical profession, and others, in various kinds of mental illness. It is fortunate that this is so because it has led to a better understanding of the significance of mental disease.

It is my opinion that a large percentage of patients with mild mental illness should be treated by the family physician or the physician who first sees the patient. He is the first contact for the patient and what he does to and for the patient may determine the future course of the patient's illness. If the situation is handled well, the patient will generally respond well. On the other hand, if the situation is badly handled either by the misuse of drugs or by the attitude of the physician, later treatment can be made remarkably more difficult.

The responsibility of the physician is to relieve the disease of his patient and to cure his illness as often as possible. Since such a large percentage of all patients present some kind of emotional problem which may be manifested by anxiety, agitation, or tension, it is obvious that any relatively safe means of overcoming such manifestations would and should have wide usage. The use of psychotropic drugs has increased the ability of the physician without psychiatric training to handle (appropriately) many patients who have an emotional disturbance. Although psychotherapy is still the most important and best method of treating all serious neuroses, supportive psychotherapy with the skillful use of drugs is an appropriate approach for most physicians to use in treating milder conditions.

In our bustling, overactive economy there is ample opportunity for tension and anxiety, some of which is decidedly unhealthy. Some of this may be manifested in such a way that a tranquilizing drug is required and in other instances an anti-depressant drug may be the one of choice, depending upon the reaction of the individual to his anxiety. Unfortunately, an increasing number of people demand tranquility at the expense of effective living. With the widespread use of these drugs the patients may lose initiative and the responsiveness which is needed for healthy existence. Much of this ability comes from controlled and healthy anxiety.

Psychotropic drugs have been recommended for a wide variety of conditions, but the use of such drugs gives one real pause for thought—are we treating symptoms, disease, or social problems? When we prescribe a tranquilizing drug, are we treating the patient or his environment? Many times, I am afraid we give patients drugs to make his family or his associates more comfortable, rather than the patient.

In much of the material about drugs which is brought to the attention of the physician by the detail man, too little emphasis is placed on the occurrence of side effects, the contraindications of potential dangers. As a matter of fact, the side effects are very frequently minimized or overlooked completely. The lay press has contributed more than its share to the dissemination of premature and incomplete accounts of the miraculous effects of these drugs. Some years ago because the medical editor of one of our weekly magazines knew that I was working with reserpine, he asked for an interview. At the time I indicated that it was likely to be beneficial, but that it was not in any sense of the word either a miracle drug nor a panacea. The article which appeared was anything but conservative and suggested that by adequate use of such drugs, we soon would not have need for large mental hospitals. This, of course, is stuff and nonsense.

On one occasion a man expressed criticism in the treatment of his wife because he had read about a certain "wonder drug" and he felt that this drug should be used in her treatment. He was surprised to learn that this drug had already

\*Professor and Chairman, Department of Psychiatry, University of Michigan, Ann Arbor, Michigan.

# THE USE OF PSYCHOTROPIC DRUGS IN GENERAL PRACTICE

## PSYCHOPHARMACOLOGICAL AGENTS USED IN PSYCHIATRY

## USES, COMPLICATIONS OR SIDE EFFECTS

TRADE NAME	GENERIC NAME	MANUFACTURER	DAILY DOSE RANGE	Psychosis	Neurosis	Depression	Anticholinergic Effects	Behavioral Toxicity	Blood	Extrapyramidal Syndromes	Hyporeflexia, etc.	Hypotension	Liver	Peripheral Edema	Seizures	Skin
<b>ANTIDEPRESSIVES</b>																
MAO Inhibitors—Hydrazines																
Marplan	Isocarboxazid	Roche	10 to 50 mg	1	12	B	A	A		B	B		A		A	A
Niamid	Nialamide	Pfizer	12.5 to 200 mg	1	12	B	B			A	A					
Nardil	Phenelzine	Warner-Chilcott	15 to 75 mg	1	12	A	A			A			A			
MAO Inhibitors—Nonhydrazines																
Parnate	Tranylcypromine	Smith, Kline & French	10 to 60 mg	1	1			C					B		A	
Amphetamines																
Benzedrine	Amphetamine	Smith, Kline & French	5 to 30 mg	1	1		C				B					
Dexedrine	Dextro-amphetamine	Smith, Kline & French	5 to 15 mg	1	1		C				B					
many	Methamphetamine	many	2.5 to 15 mg	1	1		C				B					
Iminodibenzyl Derivatives																
Elavil	Amitriptyline	Merck, Sharp & Dohme	10 to 150 mg	1	2		A	B					B	B		
Pertofrane	Desipramine hydrochloride	Geigy	75 to 200 mg	1	1	A				A			A	A	A	A
Norpramin	Desipramine hydrochloride	Lakeside	75 to 200 mg	1	1	B				B			B		A	A
Tofranil	Imipramine	Geigy	75 to 225 mg	1	2	B	A	A	A	A	A	B	A	A	A	A
Etrafon	Amitriptyline and perphenazine	Schering	10 to 150 mg	1	1	A		C	B			C	C	B		B
Triavil	Amitriptyline and perphenazine	Merck, Sharp & Dohme	10 to 150 mg	1	1	1	A		C	B		C	C	B		B
Aventyl	Nortriptyline hydrochloride	Lilly	20 to 100 mg	1	1	B				B			B			A

### KEY TO GUIDE

**USES:** *Psychosis*: psychotic excitement or agitation. Acute or chronic schizophrenic states. *Neurosis*: neurotic anxiety or other neurotic symptoms, or functional symptoms occurring in association with other disease. *Depression*: depressive symptoms of either neurotic or psychotic dimensions, or depression occurring in association with other psychiatric or medical conditions.

1. Use of the drug for the indicated condition reported in the literature.

2. Efficacy of the drug for the indicated condition supported by the literature.

**COMPLICATIONS OR SIDE EFFECTS:** *A*. Nonserious side effect occurring rarely. *B*. Nonserious side effect occurring relatively frequently. *C*. Potentially serious complication or problem. *Anticholinergic effects*: constipation, dry mouth, gastric upset, blurring of vision, or difficulty in initiating micturition. *Behavioral toxicity*: insomnia, irritability, excitability, restlessness, anxiety, psychomotor stimulation, depression, lethargy, development of tolerance, or habituation. Adapted from Public Health Service Bulletin.

been used in her case over a period of two months and had not worked the miracle that he had expected it would from reading such medical journals as the Reader's Digest and Ladies Home Journal. Nevertheless, these drugs do have a definite and important place and should be used not only by psychiatrists for the treatment of serious mental illness, but also by physicians in treating conditions with mild to severe emotional reactions, whether this be in the association with or manifested by some physical symptoms or not. At the same time the patient should not be given promises which cannot be fulfilled.

Since many physical illnesses are partially or largely due to emotional factors, the proper selection of a psychotropic drug may relieve the patient of symptoms without a long period of psychotherapy and with a minimum of understanding of the significance of the personality reaction of

the patient by the physician who is treating him. Any drug which has a significant degree of action is likely to have side effects. Perhaps in most instances, these may not be serious, but with all of the potent psychotropic drugs, there can be serious side effects. In my opinion there is far too much indiscriminate use of some of these drugs and the recent action by FDA with particular reference to prescription for such drugs is an entirely appropriate one.

There are numerous reports in the literature of disappointed hopes and of dangerous or fatal consequences in the use of psychotropic drugs. One significant warning is that if these medications are used to make the patient comfortable, it is entirely possible that severe physical disease may develop without the patient being aware of such a process, or if he is aware of it, without reporting it. This was particularly true when Reser-

#### PSYCHOPHARMACOLOGICAL AGENTS USED IN PSYCHIATRY

TRADE NAME	GENERIC NAME	MANUFACTURER	DAILY DOSE RANGE	Psychosis	Neurosis	Depression	Anticholinergic Effects	Behavioral Toxicity	Blood	Extrapyramidal Syndromes	Hyperreflexia, etc.	Hypotension	Liver	Peripheral Edema	Seizures	Skin
<b>Piperidine Series</b>																
Mellaril	Thioridazine	Sandoz	30 to 600 mg	12	2		A	A				A				
many	Rauwolfia Alkaloids															
many	Reserpine	many	1 to 5 mg	12	1			A		B		B		A	A	
<b>Substituted Diols</b>																
Equanil	Meprobamate	Wyeth	600 to 1200 mg		2	1		C								A
Miltown	Meprobamate	Wallace	600 to 1200 mg		2	1		C								A
<b>Compounds of Miscellaneous Structure</b>																
Librium	Chlordiazepoxide	Roche	10 to 100 mg	1	2				B							A
Valium	Diazepam	Roche	5 to 10 mg	1	1		A	A								A
Serax	Oxazepam	Wyeth	10 to 30 mg		1			B								A
Taractan	Chlorprothixene	Roche	30 to 600 mg	2	1		A					B	B			

#### KEY TO GUIDE

USES: *Psychosis*: psychotic excitement or agitation. Acute or chronic schizophrenic states. *Neurosis*: neurotic anxiety or other neurotic symptoms, or functional symptoms occurring in association with other disease. *Depression*: depressive symptoms of either neurotic or psychotic dimensions, or depression occurring in association with other psychiatric or medical conditions.

1. Use of the drug for the indicated condition reported in the literature.
2. Efficacy of the drug for the indicated condition supported by the literature.

COMPLICATIONS OR SIDE EFFECTS: *A*. Nonserious side effect occurring rarely. *B*, Nonserious side effect occurring relatively frequently. *C*. Potentially serious complication or problem. *Anticholinergic effects*: constipation, dry mouth, gastric upset, blurring of vision, or difficulty in initiating micturition. *Behavioral toxicity*: insomnia, irritability, excitability, restlessness, anxiety, psychomotor stimulation, depression, lethargy, development of tolerance, or habituation. Adapted from Public Health Service Bulletin.

# THE USE OF PSYCHOTROPIC DRUGS IN GENERAL PRACTICE

## USES, COMPLICATIONS OR SIDE EFFECTS

### PSYCHOPHARMACOLOGICAL AGENTS USED IN PSYCHIATRY

TRADE NAME	GENERIC NAME	MANUFACTURER	DAILY DOSE RANGE	USES, COMPLICATIONS OR SIDE EFFECTS														
				Psychosis	Neurosis	Depression	Anticholinergic Effects	Behavioral Toxicity	Blood	Extrapyramidal Syndromes	Hyperreflexia, etc.	Hypotension	Liver	Peripheral Edema	Seizures	Skin		
<b>Antidepressives</b>																		
<b>MAO Inhibitors—Hydrazines</b>																		
Marplan	Isocarboxazid	Roche	10 to 50 mg	1	2	B	A	A		B	B		A		A			
Niamid	Nialamide	Pfizer	12.5 to 200 mg	1	2	B	B			A	A							
Nardil	Phenelzine	Warner-Chilcott	15 to 75 mg	1	2	A	A			A		A						
<b>MAO Inhibitors—Nonhydrazines</b>																		
Parnate	Tranylcypromine	Smith, Kline & French	10 to 60 mg	1	1			C					B		A			
<b>Amphetamines</b>																		
Benzedrine	Amphetamine	Smith, Kline & French	5 to 30 mg	1	1		C			B								
Dexedrine	Dextroamphetamine	Smith, Kline & French	5 to 15 mg	1	1		C			B								
many	Methamphetamine	many	2.5 to 15 mg	1	1		C			B								
<b>Iminodibenzyl Derivatives</b>																		
Elavil	Amitriptyline	Merck, Sharp & Dohme	10 to 150 mg	1	2		A	B					B	B				
Pertofrane	Desipramine hydrochloride	Geigy	75 to 200 mg	1	1	A			A				A		A			
Norpramin	Desipramine hydrochloride	Lakeside	75 to 200 mg	1	1	B			B			B			A			
Tofranil	Imipramine	Geigy	75 to 225 mg	1	2	B	A	A	A	A	A	B	A	A	A			
Etrafon	Amitriptyline and perphenazine	Schering	10 to 150 mg	1	1	1	A	C	B	C	C	B	C	B	B			
Triavil	Amitriptyline and perphenazine	Merck, Sharp & Dohme	10 to 150 mg	1	1	1	A		C	B	C	C	B		B			

### KEY TO GUIDE

**USES:** *Psychosis:* psychotic excitement or agitation. *Acute or chronic schizophrenic states.* *Neurosis:* neurotic anxiety or other neurotic symptoms, or functional symptoms occurring in association with other disease. *Depression:* depressive symptoms of either neurotic or psychotic dimensions, or depression occurring in association with other psychiatric or medical conditions.

1. Use of the drug for the indicated condition reported in the literature.
2. Efficacy of the drug for the indicated condition supported by the literature.

**COMPLICATIONS OR SIDE EFFECTS:** *A.* Nonserious side effect occurring rarely. *B.* Nonserious side effect occurring relatively frequently. *C.* Potentially serious complication or problem. *Anticholinergic effects:* constipation, dry mouth, gastric upset, blurring of vision, or difficulty in initiating micturition. *Behavioral toxicity:* insomnia, irritability, excitability, restlessness, anxiety, psychomotor stimulation, depression, lethargy, development of tolerance, or habituation. Adapted from Public Health Service Bulletin.

pine was more commonly used than it is at the present time. For example, several cases of death from pneumonia have been reported associated with the use of Reserpine. Obviously the Reserpine did not cause the pneumonia, but the patient did not feel the need to report the symptoms. There is a serious danger that these drugs may mask the signs of a severe physical disease much as analgesic drugs may do.

With regard to the antidepressant drugs, I would like to emphasize that severe depression is so often associated with danger of suicide that it is generally unwise to try to treat such patients on an out-patient basis with an antidepressant drug, if the patient has given any indication of preoccupation with suicide. With the milder types of depression which can be treated in this manner, I would tend to start the patient on the imipramine group, Tofranil, Elavil, Norpramin, and if there is little or no response then one could try one of the monoaminoxidase inhibitors. It is not wise to give the imipramine type drug for some weeks after giving a monoaminoxidase inhibitor, but the other way around is apparently without significant danger.

There are a number of other cautions which one should keep in mind, not the least of which is that driving a car may be dangerous when one is on drug therapy. We have carried out a series of studies on reaction time and we find very significant differences in individuals in their response to various drugs, some of which seem paradoxical. The use of more than one drug, for example two different tranquilizers, is likely to be more dangerous than a comparable amount of drug of either one since they may potentiate each other. Furthermore alcohol, narcotics, antihistamines and sedatives are all likely to potentiate the tranquilizing drug and this can lead to dangerous consequences. A very valuable article in this connection appears in the January 31 issue of the Journal of the AMA of this year by Captain Perry and Dr. Morganstern. This article is worth reading.

In reference to various psychotropic drugs, it is vitally important that we retain our scientific attitude and not allow our judgment to be distorted by prevailing enthusiasms. It is important to have proper validation of promising drugs as

well as careful reports of all unpleasant side effects, as for example, sensitivity reactions. Frequently patients will demand some drug which a neighbor or friend is taking when as a matter of fact they might make a much more effective adjustment without the use of such a drug. It is often difficult for the physician to explain his unwillingness to make such drugs available. Psychotropic drugs can never replace the support, reassurance, tolerance and understanding that every patient has a right to expect from his physician. It is important to keep in mind that the interpersonal relationship between the patient and his physician is still and always will be one of the most important and effective tools in our treatment of patients, the use of the physician himself as an instrument of treatment.

We do owe a debt of gratitude to the pharmacologist and the pharmaceutical companies for their pioneering research in the development of these new psychotropic compounds which may well indicate the development of an important break-through in our fight against mental disease.

As with other treatments, a careful and comprehensive medical history and a thorough physical examination should be made with the appropriate laboratory tests before prescribing a psychotropic drug. Not infrequently physical illnesses may present themselves as a psychiatric disorder as in the case of multiple sclerosis. It is also important to have an awareness of the kind of mental illness with which one is dealing and of the therapeutic capabilities of the various psychotropic drugs which may be available. It is the responsibility of the physician to decide whether he should treat the patient's emotional symptoms or whether the patient should be referred to a specialist. If he decides to treat the patient's illness, then he must be aware of the various psychotropic drugs and which one is likely to be most beneficial for the patient with the least danger of harmful side effects.

In summary, there are two general classes of psychotropic drugs. The depressant or tranquilizer drugs, of which there are a great many, are primarily for the control of agitation, excitement, psychomotor hyperactivity, aggressive, noisy or destructive behavior, as well as delirium and panic. The antidepressant, on the other hand, as the name implies should be used in patients with depression. There are quite a number of such drugs, but many are only slight variations:

and some with different trade names are the same, as for example, Etrafon and Triavil. It is important to use that drug with which one has had the most success. At one time, it was recommended that the imipramine type drugs should be used in psychotic reactions while the monoaminoxidase inhibitors should be used primarily

in neurosis. Others have recommended quite the opposite. My own opinion is that one patient with a neurosis may respond better to a monoaminoxidase inhibitor and another with a similar appearing condition will respond better to the imipramine type drug.



#### **Acute Pancreatitis**

W. S. Black, T. C. Sutterfield, J. D. Martin, Jr.  
(Emory Univ. School of Medicine, Atlanta)  
*Amer Surg* 33:94-99 (Feb.) 1967

Of 250 patients with pancreatitis, 189 gave a history of alcohol intake sufficient to warrant its consideration as a contributing factor. In most instances a recent drinking bout preceded the onset of symptoms. Cholelithiasis was found in 29 patients (14%). Ileus was demonstrated radiographically in 61 patients (24%). The serum amylase was greater than 200 Somogyi units in 239 patients (92%) and the highest recorded amylase was 1,277 units. Fasting blood sugar was over 110 mg/cc in 63 patients (25%), 50 (20%) showed glycosuria and 38 (15%) had acetonuria. One hundred eighty-seven (75%) patients had one admission for acute pancreatitis, 38 were admitted twice, and 25 (10%) on more than two occasions in the 10-year period. Mortality rate in the series was 23%. The treatment of acute pancreatitis is non-operative when the diagnosis is clear, no obstruction of the biliary tract is evident, and pseudocysts are not demonstrated.

#### **Prognostic Significance of the Karyopyknotic Index After Radical Treatment for Cancer of the Female Genital Tract**

E. Wachtel (Hammersmith Hosp., London) *Acta Cytol* (Balt.) 2:35-36 (Feb.) 1967

Follow-up examinations were performed in about 800 women after radical treatment for genital cancer. A total of 628 of these were followed for at least three years or until histology or radiological evidence of remaining or recurrent disease became available. The outcome of the study mainly confirmed the original assumption that a high karyopyknotic index after treatment is usually indicative of treatment failure. The overall accuracy of predicting residual disease for all stages of squamous cell carcinoma was 92.2% and for adenocarcinoma of the endometrium and endocervix, 82.3%. Thirty-one patients with ovarian cancer had marked elevation of karyopyknotic indices after treatment, and all 31 were subsequently found to have persistent disease. A little less than half the patients with atrophic smear patterns after treatment showed clinical evidence of remaining disease.



STUDIES FROM  
THE UNIVERSITY OF ARKANSAS MEDICAL CENTER  
THE DEPARTMENT OF

# OBSTETRICS AND GYNECOLOGY

WILLIS E. BROWN, M.D., Professor and Chairman  
STACY R. STEPHENS, M.D., EDITOR

## Obstetrical Management of Hydrocephalus

W. Frank Armbrust, M.D.\*

**H**ydrocephalus, by definition, is an abnormal increase of cerebrospinal fluid within the ventricular and subarachnoid spaces of the brain leading to cranial vault enlargement. It has been recognized as a clinical entity associated with increased maternal and fetal morbidity and mortality.

### HISTORY

In 1859, it was reported that 2.1 per cent of all craniotomy operations performed in the British Empire were for hydrocephalus.<sup>1</sup> A one in five maternal mortality rate accompanied this statistic. In 1887, Phillips discussed the relationship of hydrocephalus to spina bifida.<sup>2</sup> Also in 1887, Charpentier described hydrocephalus as "a drop-sy of the brain" and listed as possible causes advanced age of the parents, alcoholism, excess in coitus, syphilis, chronic inflammation of the arachnoid and internal linings of the ventricle, interference with venous circulations, hereditary cretinism, and finally, consanguineous marriages. He stated that diagnosis could be made during labor by presentation of the head as a fluctuant pouch, similar to a second amniotic sac; the exaggerated dimensions of the fontanelle; and the bony skull frequently feeling like parchment.<sup>3</sup> He noted that Maggioli drained the hydrocephalic cranial vault of a fetus presenting a breech by passing a catheter through the arachnoidal canal into the cranium. In 1889, Pouillet reported 106 cases of hydrocephalus with 24 maternal deaths.<sup>3</sup> An analysis of 24 other maternal deaths by Speigelberg during the same time period, revealed the majority to be due to rupture of the

uterus or other major trauma of the birth canal.<sup>3</sup> These early obstetricians thus recognized the problem and pleaded for early diagnosis and definite intervention. Today, maternal morbidity and occasionally mortality are associated with hydrocephalus; but refinements in diagnostic aids and physician awareness have markedly decreased the appalling figures previously mentioned for the 19th Century. It is the intent of this paper to provide the physician with a better understanding of the obstetrical management of the hydrocephalic dystocias by the early use of clinical skills and radiological aids.

### CLASSIFICATION

Hydrocephalus may be classified as (1) Internal-cerebrospinal fluid contained within the ventricles. (2) External-cerebrospinal fluid contained between the dura mater and the brain. (3) Communicating-cerebrospinal fluid between the ventricles and also between the brain and the dura mater. The most common cause of hydrocephalus is obstruction to the spinal fluid pathways. This may be secondary to inflammation, tumors, or congenital malformations.

Hydrocephalus may further be classified according to the amount of fluid present in the cranial vault. Minor degrees of hydrocephalus, which constitute the majority of cases, feature a cranium containing less than 300 cc. of spinal fluid. In moderate hydrocephalus the cranium contains 300 cc. to 900 cc. of fluid, and in major hydrocephalus the cranium contains any amount greater than 900 cc.

Hydrocephalus occurs in approximately 1 in 2,000 to 3,000 deliveries.<sup>4</sup> It presently causes a

\*From the University of Arkansas Medical Center, Department of Obstetrics and Gynecology, Little Rock, Arkansas.

fetal mortality of approximately 90 per cent. It cannot be related definitely to age, parity, prematurity, or sex of the fetus.

Vertex presentation is most common. In a series of 304 cases Feeney and Barry reported a vertex presentation in 67 per cent and a breech presentation in 29 per cent.<sup>5</sup> Transverse lie is rare in the hydrocephalic because of the large head occupying either one or the other pole of the uterus.

Associated fetal and maternal complications may occur with hydrocephalus. The most common fetal malformations are spina bifida and talipes equinovarus. Other reported fetal anomalies are congenital heart disease, meningocele, imperforate anus, harelip, and cleft palate. Hydrocephalus in multiple pregnancies has been reported but is rare. Usually only one fetus has the large cranium.

Four to eight per cent of all clinically suspected cases of polyhydramnios are associated with hydrocephalus. Primary or secondary uterine inertia or cephalo-pelvic dystocia should arouse suspicion of this entity. Hydrocephalus has been reported with almost all the obstetrical, medical, and surgical complications of pregnancy. These include: toxemia of pregnancy, accidental hemorrhage, vaginal spotting, hypertension, pyelitis, placenta praevia, syphilis, fibroids, and diabetes.

### DIAGNOSIS

The diagnosis of hydrocephalus may be difficult. Generally, the problem is unsuspected until late in labor when forceps application becomes more than an exercise or when a breech has been delivered over the perineum and a spina bifida or meningocele alerts the physician to the possibility. Rarely does the enlarged aftercoming head become the convincing and final evidence. The vertex may not be grossly enlarged and often is not recognized abdominally. The deflection which the hydrocephalic head undergoes during labor and the abdominal tenderness over the lower uterine segment due to distention of the uterine muscle should alert the physician. Unexpected dystocia in the multipara or non-engaged vertex even in the face of good labor should arouse one's suspicion of hydrocephalus, especially if fetal heart tones are heard over the umbilicus.

Diagnosis is usually made by vaginal examination.<sup>6</sup> The vertex, according to Feeney and Barry, feels like an "islet of bone in a sac of membranes". The sutures are usually widened, the fontanelles are gaping and often, after the membranes have

been ruptured, one feels what appears to be a second bag of waters. Some examiners, believing that the bag of waters was never ruptured, have drained the fetal head of fluid in an attempted second amniotomy.<sup>5</sup> The dead hydrocephalic fetus may have its parietal bones approximated by external pressure, and the presenting part of such a fetus may enter the pelvis down to the level of the ischial spines. Should this be the case, the majority of the head and the fluids present within the cranium are still above the palpable vertex. Radiologic technique is probably the most helpful means of diagnosing hydrocephalus prior to the onset of labor. However, minor degrees of hydrocephalus may be missed even by X-ray and only moderate and severe anomalies will be picked up. Sarma lists the following signs for diagnosing hydrocephalus by X-ray: (1) The skull is enlarged, sometimes to a major degree. (2) The bones of the vault, although they tend to be larger than normal, are thin and do not show the heavy ossification of the mature fetus. Peculiar circular bony defects of the skull, craniolacunia or craniofenestrae, may be observed. (3) The head is often deflexed and the brow may overhang the face. (4) The face is disproportionately small. (5) The body is disproportionately small as compared to the head. (6) There may be associated defects of the lumbar spine suggestive of spina bifida or meningocele.<sup>7</sup>

### MANAGEMENT

Most authors agree that once hydrocephalus is diagnosed the patient should be admitted to the hospital and the pregnancy terminated.<sup>8</sup> The primary objective in management consists of decompression of the head by withdrawal of cerebrospinal fluids. There are many ways to accomplish this maneuver.<sup>9</sup> If the diagnosis is made prior to the onset of labor, it has been recommended that the vertex be tapped with a spinal needle through the abdominal wall especially if there is a breech presentation.<sup>10</sup> The vertex is difficult to reach vaginally and, once the breech presents, injury to the maternal pelvis may result if attempts are made to drain the hydrocephalic vertex by this route. The earlier in labor the hydrocephalic is diagnosed and drained, the lesser the maternal morbidity and mortality. The longer the patient labors with a hydrocephalic vertex, the greater is the chance of uterine rupture due to distention of the lower uterine segment.

Once diagnosis has been made and the patient

has dilated to three centimeters, she may be taken to the delivery room and with epidural or caudal block, or under deep sedation, retractors may be placed in the vagina and the cervix visualized. A 16 or 18 gauge spinal needle is then inserted into the fontanelles under direct vision. Most authors feel that the physician should observe the drainage of fluid until it ceases, since the needle may become blocked with blood clots or brain tissue.<sup>8</sup> The usual time for drainage of a moderate hydrocephalic fetus through a spinal needle, is approximately 15 to 25 minutes. If a meningocele is present a stiff catheter may be propelled into the head for drainage. Danforth has suggested laminectomy with passage of a catheter into the skull when neither meningocele nor spina bifida is present.<sup>11</sup>

Rather than needle drainage, some authors suggest craniotomy using the Smellie scissors or large perforator.<sup>12</sup> However, there is an increased incidence of damage to the maternal pelvis and bladder using this instrument. O'Neill feels that it is safer to perforate the aftercoming head of a breech with a uterine dressing forceps than with the Smellie scissors.<sup>12</sup> Following perforation of the hydrocephalic head, a Willet clamp may be applied to the skin over the vertex and traction applied. When craniotomy is attempted, the cervix should never be less than three centimeters dilated. Some authors recommend applying forceps to the head once the cervix has become completely dilated to steady it prior to perforation.<sup>10</sup> Forceable methods of extraction of a perforated head and version and extraction are contraindicated in the management of hydrocephalus. All authors agree that the patient should be typed and cross-matched prior to any perforation or drainage procedure and that the optimum anesthesia should be used.

#### MATERIAL

There have been 13 hydrocephalic infants delivered at the University of Arkansas Medical Center since 1948; an incidence of 1 in 3,600 deliveries.

Nine of the patients were Negro and four were white, a normal ratio for our clinic population. Average parity was 3.8. Four patients were primigravidae and three patients had ten or more children. Average age was 26.3 years with a range of 15 to 38 years.

Presentations included ten vertex, three breech, and one twin pregnancy. Labor on the average

was prolonged. Four patients had labors of less than ten hours. Two of these were primigravidae. Three patients had a labor between ten and twenty hours; and six patients' labors exceeded twenty hours.

Diagnosis was made prior to labor in three patients, during the first stages of labor in four patients, during the second stage of labor in two patients, and postpartum in four infants. Prior to and during labor radiological examination confirmed the diagnosis in seven patients. During labor, prolonged second stage and failure to descent suggested hydrocephalus.

Termination of labor was accomplished in three patients by needle aspiration of the cranium. Two patients had craniotomy with Smellie scissors. Two patients were terminated by low cervical cesarean section. In one infant a stiff catheter was passed through a meningocele into the cranium and drainage of the spinal fluid allowed delivery of the breech. Five patients were delivered by low or mid-forceps.

There was no case of uterine rupture or maternal death. Cervical and perineal lacerations occurred in two patients. Postpartum endometritis developed in three patients.

Associated maternal problems are listed in Table I. Of interest is the finding of one previous hydrocephalic infant.

TABLE I  
ASSOCIATED MATERNAL CONDITIONS

Abruptio Placenta	3
Amnionitis	2
Eclampsia	1
Pre-Eclampsia	1
Polyhydramnios	1
Anuria	1
Previous Hydrocephalic Birth	1

Six of the thirteen infants were stillborn. In four other infants death occurred within twenty-four hours postpartum. Only three infants are still living. One of these was a seven pound hydrocephalic male born of a 16 year old primigravida. This baby also had a spina bifida and meningocele at delivery. This infant received a shunt operation for hydrocephalus approximately 10½ months after birth and is presently doing well.

Five infants weighed less than 5.5 pounds. The degrees of hydrocephalus were estimated at the

time of drainage. Six infants had less than 300 cc., four had 300-900 cc., and three infants had more than 900 cc. fluid.

TABLE II  
ASSOCIATED FETAL CONDITIONS

Meningocele	3
Spina Bifida	2
Omphalocele	1
Polydactylysm	1
Polycystic Kidneys	1
Small Adrenals	1
Small Spleen	1
Large Thymus	1
First Twin	1
(Second Twin normal stillborn by breech extraction)	
Lacerated Scalp	1

Associated fetal conditions are shown in Table II. Meningocele was the most common and was present in three of 14 infants. One infant with hydrocephalus also had polycystic kidneys, adrenal hypoplasia, a small spleen, and a large thymus. A rarity was delivery of a first twin which was hydrocephalic. The mother was also an eclamptic. The second twin was delivered by breech extraction and was stillborn, but normal in appearance. Finally, a lacerated scalp of one hydrocephalic infant occurred when the physician attempted amniotomy for what appeared to be a second bag of waters and drainage of the cranium was accomplished.

### DISCUSSION

Thirteen hydrocephalic deliveries have been managed at the University of Arkansas Medical Center with no maternal deaths and a low maternal morbidity. Fetal salvage, as might be expected, was poor despite the dubious success of three living children. Radiological evidence seems to have been the most helpful clue in diagnosis. Only one patient was diagnosed by vaginal examination while four patients became post-partum observations. Age, parity, and race played no part in hydrocephalus, although in length of

gestation there seemed to be a tendency toward prematurity. Length of labor was prolonged, and there was increased operative aid for delivery. The low incidence of maternal morbidity and abnormality is attributable to the fact that seven patients were diagnosed prior to the second stage of labor and that appropriate intervention prevented uterine rupture.

### SUMMARY

1. The history, diagnosis, and management of hydrocephalus in pregnancy have been presented.
2. Hydrocephalus is a rare entity and is usually diagnosed after the onset of labor.
3. Maternal injury and morbidity may be markedly decreased by early diagnosis and cranial drainage, either by spinal needle or by craniotomy.
4. Drainage of the large hydrocephalic breech is recommended by the abdominal approach if diagnosed prior to the onset of labor.

### REFERENCES

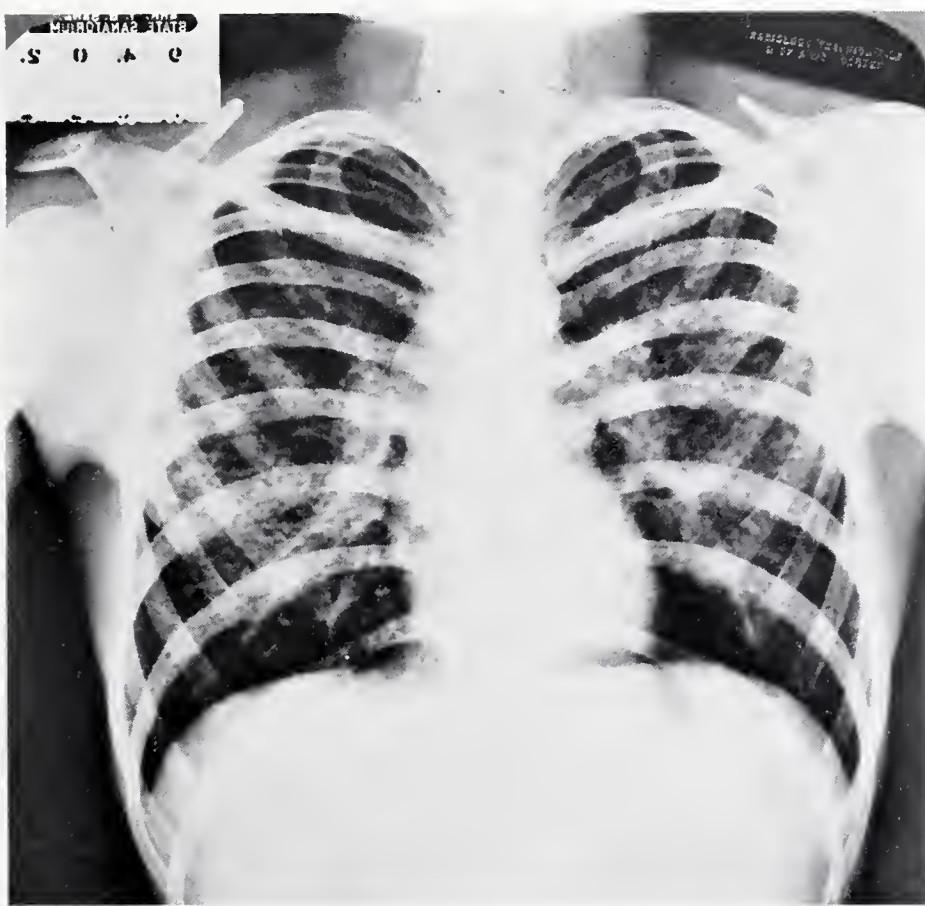
1. Swayne, J. G.: Hydrocephalus as a Complication of Labor, Transaction. Obstet. Soc. London 29:405, 1887.
2. Phillips, J.: The Aetiology and Pathology of Hydramnios with its Relationship to Certain Foetal Deformities. Edinburg Med. J. 32:804-898, 1887.
3. Charpentier, A.: A Practical Treatise on Obstetrics. Vol. III, pp. 262-268 William Wood and Co. New York, 1887.
4. Eastman, N. J., Hellman, L. M.: Obstetrics, 12th Edition. Appleton, New York, 1961.
5. Feeney, J. K., Barry, A. B.: Hydrocephalus as a Cause of Maternal Mortality and Morbidity, A Clinic Study of 304 Cases. J. Obstet. Gynec. Brit. Emp. 61:652, 1954.
6. Ballantyne, J. W.: Trans. Edinburg Obstet. Soc. 30:20, 1905.
7. Sarma, V.: Hydrocephalus of the Fetus in Obstetric Practice. Clin. Ob tet. and Gynec. Vol. 6, No. 2, 1963.
8. O'Connor, C. T., Gorman, A. J.: The Treatment of Hydrocephalus in Cephalic Presentation. Am. J. Obstet. & Gynec. 43:521, 1942.
9. Boring, W. D., Jr., Nathanson, B. N.: Transabdominal Fetal Encephalocentesis for Hydrocephalus. Obstet. and Gynec. 26:399, 1965.
10. Jacobs, J. P.: Transabdominal Drainage of Hydrocephalus Associated with Breech Presentation. Obstet. and Gynec. 26:557, 1965.
11. Danforth, D. N.: A Method of Delivery for Hydrocephalus Associated with Breech Presentation. Am. J. Obstet. and Gynec. 54:694, 1947.
12. O'Neill, E.: Destructive Obstetric Operations. Obstet. and Gynec. 21:725, 1963.



# WHAT IS YOUR DIAGNOSIS?

Prepared by the  
Department of Radiology, University of Arkansas  
School of Medicine, Little Rock

ANSWER ON PAGE 169



**HISTORY:** Sixteen year old Negro male with no symptoms. This abnormality was found on a survey chest film.

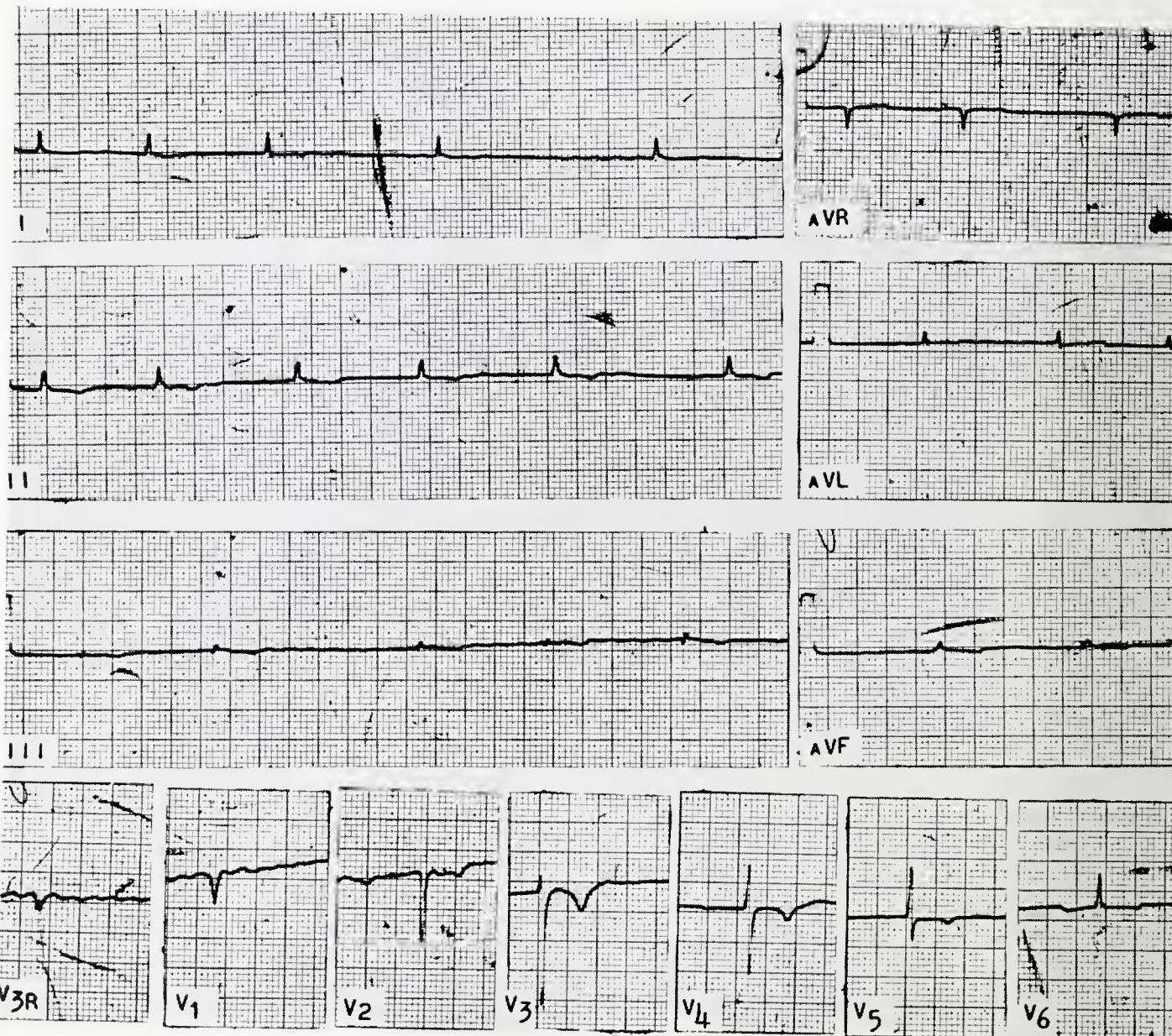
# ELECTROCARDIOGRAM

# OF THE MONTH



AGE: 61 SEX: M BUILD: Medium BLOOD PRESSURE: 112/90/86  
CARDIAC DIAGNOSIS: Constrictive pericarditis  
OTHER DIAGNOSES:  
MEDICATION: Digoxin 0.25 mgm daily  
HISTORY: Pre-operative tracing

ANSWER ON PAGE 169



The Department of Medicine, University of Arkansas Medical Center  
James S. Taylor, M.D., Professor of Medicine

# What's all the fuss about bactericidal?

The ultimate aim in antibiotic therapy is to contain the bacterial colony and eliminate infection. Both 'cidal' agents and bacteriostatic DECLOMYCIN achieve this goal. DECLOMYCIN inhibits susceptible pathogens by stopping their growth; cidal agents affect the pathogens only while they are growing.

Though the two mechanisms differ, the end result is the same—containment of the infecting organism. *However, a very important attribute of any antibiotic is its potency against a broad range of pathogens.* DECLOMYCIN not only offers broad-spectrum potency, but high serum and tissue levels with persistent activity against tetracycline-sensitive organisms. Therapeutic benefits continue for 1-2 days after dosage stops to help prevent relapsing infection.

These are the reasons why so many doctors make DECLOMYCIN their basic broad-spectrum antibiotic. At last count, one billion doses had been administered since its introduction, and the number keeps rapidly growing.

**DECLOMYCIN<sup>®</sup>**  
DEMETHYLCHLORTETRACYCLINE



Prescribing information on next page.

For a wide range of everyday infections—respiratory, urinary tract and others—in the young and aged—the acutely or chronically ill.

# True broad spectrum

DECLOMYCIN Demethylchlortetracycline should be equally or more effective than other tetracyclines when the offending organisms are tetracycline-sensitive.

**Contraindication:** History of hypersensitivity to demethylchlortetracycline.

**Warning**—In renal impairment, usual doses may lead to excessive accumulation and liver toxicity. Under such conditions, lower than usual doses are indicated, and, if therapy is prolonged, serum level determinations may be advisable. A photodynamic reaction to natural or artificial sunlight has been observed. Small amounts of drug and short exposure may produce an exaggerated sunburn reaction which may range from erythema to severe skin manifestations. In a smaller proportion, photoallergic reactions have been reported. Patients should avoid direct exposure to sunlight and discontinue drug at the first evidence of skin discomfort. Necessary subsequent courses of treatment with tetracyclines should be carefully observed.

**Precautions**—Overgrowth of nonsusceptible organisms may occur. Constant observation is essential. If new infections appear, appropriate measures should be taken. In infants, increased intracranial pressure with bulging fontanelles has been observed. All signs and symptoms have disappeared rapidly upon cessation of treatment.

**Side Effects**—Gastrointestinal system—anorexia, nausea, vomiting, diarrhea, stomatitis, glossitis, enterocolitis, pruritus ani. Skin—maculopapular and erythematous rashes. A rare case of exfoliative dermatitis has been reported. Photosensitivity; onycholysis and discoloration of the nails (rare). Kidney—rise in BUN, apparently dose related. Hypersensitivity reactions—urticaria, angioneurotic edema, anaphylaxis. Teeth—dental staining (yellow-brown) in children of mothers given this drug during the latter half of pregnancy, and in children given the drug during the neonatal period, infancy and early childhood. Enamel hypoplasia has been seen in a few children. If adverse reaction or idiosyncrasy occurs discontinue medication and institute appropriate therapy.

**Average Adult Daily Dosage:** 150 mg q.i.d. or 300 mg b.i.d. Should be given 1 hour before or 2 hours after meals, since absorption is impaired by the concomitant administration of high calcium content drugs, foods and some dairy products. Treatment of streptococcal infections should continue for 10 days, even though symptoms have subsided.

**Capsules:** 150 mg; **Tablets:** film coated, 300 mg, 150 mg, and 75 mg of demethylchlortetracycline HCl.

**DECLOMYCIN<sup>®</sup>**  
**DEMETHYLCHLORTETRACYCLINE**

LEDERLE LABORATORIES, A Division of  
American Cyanamid Company, Pearl River, New York



## DIPHTHERIA

Fortunately no cases of diphtheria have been reported in Arkansas as of July 1, 1967. Two cases of diphtheria were reported during 1966 with no deaths.

Although diphtheria has been reduced in incidence, the severity has not been altered at all. Fatality is commonly stated to be 2 to 5 percent, but may be 10 to 12 percent during epidemics. A needless death emphasizes the need of active immunization against diphtheria for everyone, especially infants and preschool children, as this group constitutes the greatest segment of susceptibles, as well as those who are less able to seek immunization for themselves.

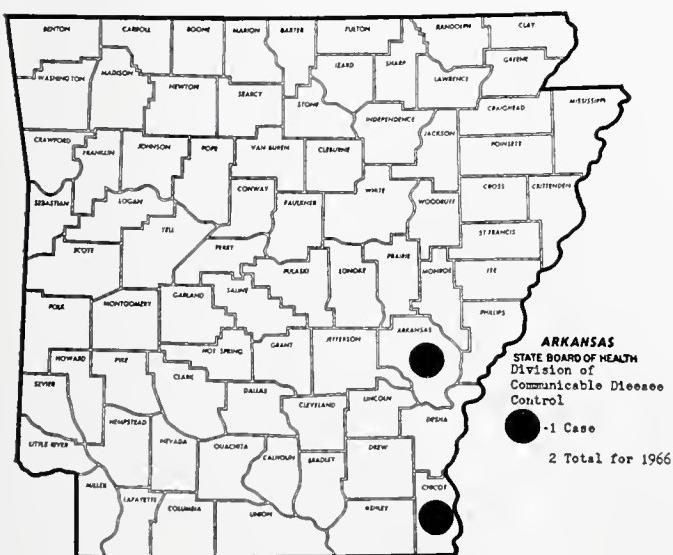
Diphtheria is an acute febrile infection usually observed as a tonsillitis, pharyngitis, or rhinitis. Characteristically, white or grayish splotches or patches develop giving rise to the classical grayish membrane. It should be emphasized that like other infectious diseases, the inapparent diph-

theria infections of the upper respiratory tract outnumber recognized cases. All suspected cases should have the benefit of bacteriological examination especially in view of the fact that streptococcal or staphylococcal pharyngitis, trench mouth, syphilis, infectious mononucleosis, fungus infections, and others may mimic diphtheria. Even though antibiotic therapy is instituted immediately upon observation of the patient, it is particularly important that all have the benefit pre-therapy culture, otherwise, the therapy will interfere with the subsequent attempts at establishing a definitive diagnosis.

The incubation period is usually 2 to 5 days, but may be longer in some instances. Communicability obviously begins during the incubation period and usually persists 2 weeks or less, seldom more than 4 weeks although certain individuals become carriers. Since the active immunization is nearly 100 percent effective, widespread use of diphtheria toxoid combined with tetanus toxoid and, for those under 6, combined with pertussis toxoid should effectively reduce the reservoir of diphtheria by preventing both the clinical and inapparent cases, thereby reducing the number of potential carriers. Eradication of diphtheria is possible and should be accomplished; however, we may expect to encounter isolated cases from time to time as long as either ignorance or parental neglect is allowed to prevail in the community.

Traditionally endemic areas for diphtheria should serve as a guide for more intensive efforts to immunize the so-called "hard to reach" individuals who remain the susceptibles of the community and constitute a very real potential danger once the diphtheria organism is brought into their midst by a carrier or a case. In diphtheria the slogan "The Wise Immunize" is so appropriate.

### DIPHTHERIA CASES FOR 1966





## GUEST EDITORIAL

### EDITORIAL

# The Patient - The Physician - The Clergy - The Challenge

Jerome S. Levy, M.D.\*\*\*

Outside a patient's room a heated argument was overheard between two men, a minister and a physician. The physician asked, "What are you trying to do, play doctor?". The minister replied, "What are you trying to do, play God?". This incident serves to recall to each of us the many times our patients or their families have called upon us to make decisions which put us, as physicians, in the position of "playing God". This is not a role for physicians to accept and certainly not one we should attempt to play.

Yet, in the care of every patient there is a great spiritual need which must be met. Rouse\* stated, "Above all, he, (the doctor), needs a working partnership with God Himself". More and more, physicians are turning to ministers for help in meeting the spiritual needs of the sick. The barriers must be lifted between these two dedicated professions. Each should complement and support the other in order to coordinate rather than separate the spiritual, the mental and the physical. Feibelman\*\* stated, "We men who serve others can no longer demarcate our provinces". There is a task confronting both doctor and minister. Our mutual respect will provide the opportunity for a partnership in the treatment of the whole man.

A random glance through the Arkansas Gazette was arrested by a headline in Ann Landers' column, "Fear is worse ill than cancer". She quoted

a letter from a woman who had been operated on for a malignancy and who was answering a letter from another woman who had had a similar operation. She had expressed great fear. She told how faith had removed her fears. She wrote, "Fear knocked on my door. Faith answered it. And no one was there". Very simply, this admonishes us, as physicians, to call upon those who can rekindle faith in our patients.

Each county or district medical society has the opportunity to take the lead in promoting close association between physicians and ministers. You are urged to have programs on Medicine and Religion with your members and the clergy as participants.

Many subjects are available. These include alcoholism, the unwed mother, the retarded child, to mention a few. A panel discussion for preparing the public for catastrophic illness and fear of illness would be a most important topic for discussion. There are many other subjects, too numerous to mention here, but your State Medical Society Committee on Medicine and Religion is prepared and ready to help you with any program . . . just call upon it.

You will be amazed and gratified with the whole-hearted acceptance and support such programs will produce. There is great need and you can meet it. The opportunity for leadership in this area is yours, ours, the physicians. We must take it. We must be the leaders in this program.

The challenge is before you. Its acceptance will reward greatly.

\*Rouse, M. O., Symposium, Miss. State Med. Assoc. May 1963, J.M.S.M.A. Sept. 1963.

\*\*Feibelman, Julian B., *ibid.*

\*\*\*500 South University, Little Rock, Arkansas.

## MEDICINE IN THE



### THE MONTH IN WASHINGTON

Washington, D.C.—John W. Gardner, secretary of Health, Education and Welfare, called on the medical profession and others in the health field to "search for new and less expensive ways of doing things."

This was the main theme of his talk at the windup session of a two-day National Conference on Medical Costs attended by 300 physicians, hospital administrators and other leaders in the various aspects of health care. He said the conference discussions "reflected a universal recognition that change is necessary."

"We cannot go on as we have in the past," Gardner said. "New patterns will be necessary. Those who entertain some apprehension as to what the new patterns will be had better plunge in and experiment with their own preferred solutions . . . Standing back and condemning the solutions that others devise won't stem the tide of change . . .

". . . there is not yet any agreement as to what a more perfect system would look like. It seems likely that we will go through a period of experimentation and in true American fashion may end up with several variations in different parts of the country, suiting local preferences and conditions.

"Whether the health care system of the future should develop around the hospital as an organizational focus, or around the payment mechanism, or around group practice plans, or around all of these in some sort of collaboration with State health planning councils—or whether other variants will emerge—is still a wide-open question . . .

"Essentially . . . the challenge is before the health profession. They must join the search for solutions. They must be willing to re-examine and overhaul long-established practices. The search for new and better and less expensive ways of doing things must be carried on by hospitals, medical schools, community agencies, and by the thousands of individual physicians serving the

health needs of people . . ."

Acceptance of such responsibility by those in the private sector, Gardner said, "is the best insurance against the government having to shoulder more than its share of corrective measures."

Citing appointment of an advisory committee to study hospital effectiveness, Gardner said that HEW will do its part in the search for more efficient practices. The committee is to report by the end of this year.

Dr. Milford O. Rouse, president of the AMA, commended the Administration "for showing its concern for rising health care costs by calling a national conference on the problem.

"The American Medical Association and its member physicians pledge to accept their responsibilities in finding solutions to this vital problem," he said. "We expect that other full members of the health team—dentists, hospitals, nurses, pharmacists and pharmaceutical companies, the insurance industry and others—will do likewise.

"We hope the Administration will also accept its responsibility to find ways to ease the burden of inflation which contributes substantially to inflating the cost of medical care. We hope the Administration will call a moratorium on new health legislation until existing programs can be critically evaluated to eliminate overlapping, and duplication and to achieve maximum conservation of tax funds. We hope available tax money, particularly in the health field, can be used to help those who really need help while allowing our more fortunate citizens to accept responsibility for their own care."

\* \* \* \*

Congress passed and President Johnson signed into law a bill that extends the program of grants for the construction of community health centers for three years (until June 30, 1967).

It authorizes the appropriations of \$50 million for fiscal year 1968 and \$70 million for 1970.

The amended law also extends the program of grants for the initial staffing of community mental health centers for an additional two years (until 1970) and authorizes the appropriation of \$26 million for fiscal 1969 and \$32 million for fiscal 1970. An appropriation of \$30 million already was authorized for fiscal 1968.

\* \* \* \*

President Johnson signed into law legislation extending the draft for four years. It includes a provision continuing special pay for physicians and dentists.

The new law also continues the authority to defer medical students until completion of internship. In the future, foreign physicians in this country will be liable to draft up to age 35—the same as for Americans. Under the old law, foreign physicians were exempt from age 26.

The present blanket military exemption for Public Health Service officers serving on loan to other agencies such as Food and Drug Administration was removed despite protests by the agencies involved. Such assignments with draft exemption can now be made only to the Coast Guard, Bureau of Prisons and Environmental Services Administration. The American Medical Association had asked Congress to allow no draft exemptions for non-military service.

\* \* \* \*

The President of the American Medical Association said that Sargent Shriver, Director of the Office of Economic Opportunity, was in error when he accused the AMA of being opposed to medical care for the poor because the AMA is opposed to the OEO's slum health care centers.

Milford O. Rouse, M.D., Dallas, Texas, the AMA president said the AMA is opposed to the OEO projects because the health care problems in the slums can be taken care of under existing programs, particularly Medicaid.

"There is already too much proliferation of wasteful, overlapping federal health programs," Dr. Rouse said.

"Also of concern to physicians is the fact that at times it seems that government is too quick to set up health care programs without consulting with those who know most about health care—physicians."

The AMA president also said Shriver was misinformed about AMA's position on helping those who need help.

"I am now and always have been in full accord

with AMA's long-standing position that those who need help in financing health care should receive it," Dr. Rouse said.

"The AMA, however, is opposed to the doling out of tax funds to the wealthy and well-to-do. The expenditure of public funds for those who can well afford to finance their own health care limits the amount of resources available to those who do need it. Such a policy cannot be justified morally or economically."

#### **A CPR (CARDIOPULMONARY RESUSCITATION) PROGRAM FOR ARKANSAS**

In July 1966, the Arkansas Heart Association (affiliate of the American Heart Association) launched a statewide CPR program. Our Heart Association (supported by gifts from the people of Arkansas) has trained the following through May 31, 1967:

126 M.D.s and Medical Students

1,016 Nurses, LPNs and nursing assistants

2,591 High risk Laymen\* and others

Instructors, both lay and professional, have been trained from all areas of the state. On the whole, the response to this program has been very gratifying with the exception of the physician members of the medical profession, the group which should be most concerned with prevention of unexpected death.

Physicians as a whole are inclined to feel that if they "see a movie or read an article" they are proficient. In most instances this is quite true; however, the proper application of this technique demands not only practice on a mannikin but detailed instruction in the proper, sufficient and judicious use of drugs to improve cardiac contractility, maintain perfusion pressure and combat acidosis. Knowledge of electrical defibrillation of the heart and electric cardiac pacemakers (both internal and external) are also necessary for successful resuscitations. Post-resuscitation care is also highly specialized.

A recent review of attempted resuscitations during a 6 month period at the Little Rock Veterans Administration Hospital reveal a 30% (10 of 30 attempts) success rate (defined as patients discharged from the hospital). If patients are excluded in whom resuscitation should not have been attempted (terminal cancer, cardiac rupture, etc.) the success rate was 50%. No neurological

---

\*Firemen (state and local), policemen, rescue squads, life guards, power company employees (the Arkansas Power and Light Company has trained *all* its high risk power linemen).

deficit was observed in this group of patients and many have returned to productive work.

It is not optimistic to assume a similar record is within the reach of every physician and hospital in the state.

James E. Doherty, M.D.  
Vice-Chairman  
CPR Committee, A.H.A.  
Chief, Cardiology Section  
VA Hospital, Little Rock, Ark.

### **Little Rock Doctor Receives Special FAA Award**

Dr. Phil E. Thomas, Jr., of Little Rock is one of ten aviation medical examiners appointed 40 years ago by the Bureau of Air Commerce who have been presented with certificates of commendation by the Federal Aviation Administration in Washington.

In 1927, Dr. Thomas joined the Arkansas National Guard in order to become a flight surgeon for the old 154th Observation Squadron. He completed a course for flight surgeons that year and was appointed examiner for pilots for the FAA, a position he holds now.

Dr. Thomas has been a member of the Pulaski County Medical Society since 1920 when he transferred his membership from Monroe County.

### **CONTINUING EDUCATION COMMITTEE**

#### **Meeting of May 25, 1967**

Present: Drs. Fisher, Matthews, Nettles, and Shorey.

Representatives from Continuing Education Committee of Arkansas Medical Society: Drs. Sanders, Taylor and Wynn.

Representatives from Continuing Education Committee of the Arkansas Academy of General Practice: Drs. Ellis, Gay and Parker.

Invited Guests: Dr. Alfred Kahn—Journal of the Arkansas Medical Society; Mr. Robert C. Donaldson—UAMC Audiovisual Communications.

1. The results of the Continuing Education Questionnaire mailed during the summer of 1966 to 1,431 Arkansas physicians were reviewed.
2. The 1966-67 programs and attendance were reviewed: 9 courses were planned totaling 157 instruction hours. 159 physician registrations

were received from 138 individual physicians. The Dermatology program scheduled for February 24 and 25 was cancelled because of the small (19) physician preregistration. Summary of the 1966-67 programs with number of participants is appended.

3. A 1967-68 year program in cardiovascular disease has been subsidized by the Arkansas Heart Association (\$750.00). The Arkansas Thoracic Society will hold their Respiratory Disease Symposium separate from the UAMC Continuing Education program during 1967-68.
4. Dr. Kahn discussed the role of the Journal of the Arkansas Medical Society in the program. He suggested printing programs in the journal and pointed out that he would like presentations published as frequently as possible, in the Journal.

The present plan of notifying local newspapers of attendance by their local physicians was felt to be useful publicity. A general announcement of this fact at the opening of the session was recommended. Participating physicians would have the option of requesting no publicity. It also was felt desirable to publicize the preregistered physician lists.

5. Mr. Donaldson reviewed the status of our considerations of possible Continuing Education programs via ETV (Channel 2). This report is appended.
6. The 1967-68 year programs were reviewed. This program is appended.
7. Considerable discussion ensued regarding the philosophy and formats of programs and means of increasing attendance and participation. It was the feeling of all in attendance that efforts to more adequately publicize the programs and enhance individual physician participation were essential.

Word of mouth publicity by the Committees, a greater role of the "Journal of the Arkansas Medical Society", and an increasing spectrum of course formats were thought desirable. Increasing participation by the Arkansas Medical Society and Arkansas Academy of General Practice was discussed.

Respectfully submitted,  
Delbert A. Fisher, M.D., Chairman  
Continuing Education Committee

## PLANNED EXPANSION OF MEDICAL SCHOOL ENROLLMENT

In 1959 the Surgeon General's Consultant Group on Medical Education (in its report *Physicians for a Growing America*) recommended that a minimal national medical manpower objective should be the graduation of 11,000 physicians a year by 1975 which would require the admission of at least 12,000 entering medical students by 1971. Legislation to provide matching grants for the construction of health education facilities was passed in 1963, and funds for its implementation were appropriated in 1964. In 1965 the Health Professions Educational Assistance Act was amended to provide "basic" and "special" improvement grants for the support of the operation of health professions schools. Funds to implement 70 per cent of the "basic" improvement grants were appropriated for fiscal year 1967. The purpose of this Datagram is to summarize the plans medical schools have made for the expansion of enrollment through 1971-72.

Responsible institutions have announced plans for the development of 15 new medical schools. These new medical schools plan to admit 930 entering medical students by 1971-72. Established medical schools have firm plans for expanding enrollments by a total of 1,261 entering medical students by 1971-72. Table 1 presents the number of students enrolled in academic years 1956-57 through 1965-66 and the number of new additions to be expected from the establishment of

new schools and from the presently planned expansion of established schools to the year 1971-72. The total expected enrollment of entering medi-

TABLE 1  
FIRST-YEAR MEDICAL SCHOOL ENROLLMENT  
1956 TO 1965 AND ESTIMATES TO 1971

Year*	New School Enrollment	Expansion of Existing School Enrollment	Total Enrollment
1956-57	127	155	8,014
1957-58	---	16	8,030
1958-59	---	98	8,128
1959-60	---	45	8,173
1960-61	40	85	8,298
1961-62	---	185	8,483
1962-63	---	159	8,642
1963-64	---	130	8,772
1964-65	24	60	8,856
1965-66	---	-97	8,759
1966-67	70	155	8,984
1967-68	180	172	9,336
1968-69	192	217	9,745
1969-70	176	371	10,292
1970-71	218	146	10,656
1971-72	94	200	10,950

\*Figures for 1966-67 through 1971-72 are estimates.

cal students of 10,950 falls short by 1,050 of the 12,000 recommended in 1959.

The creation of a modern medical school or the expansion of enrollment in an established medical school involves the development or extension of highly important programs for the

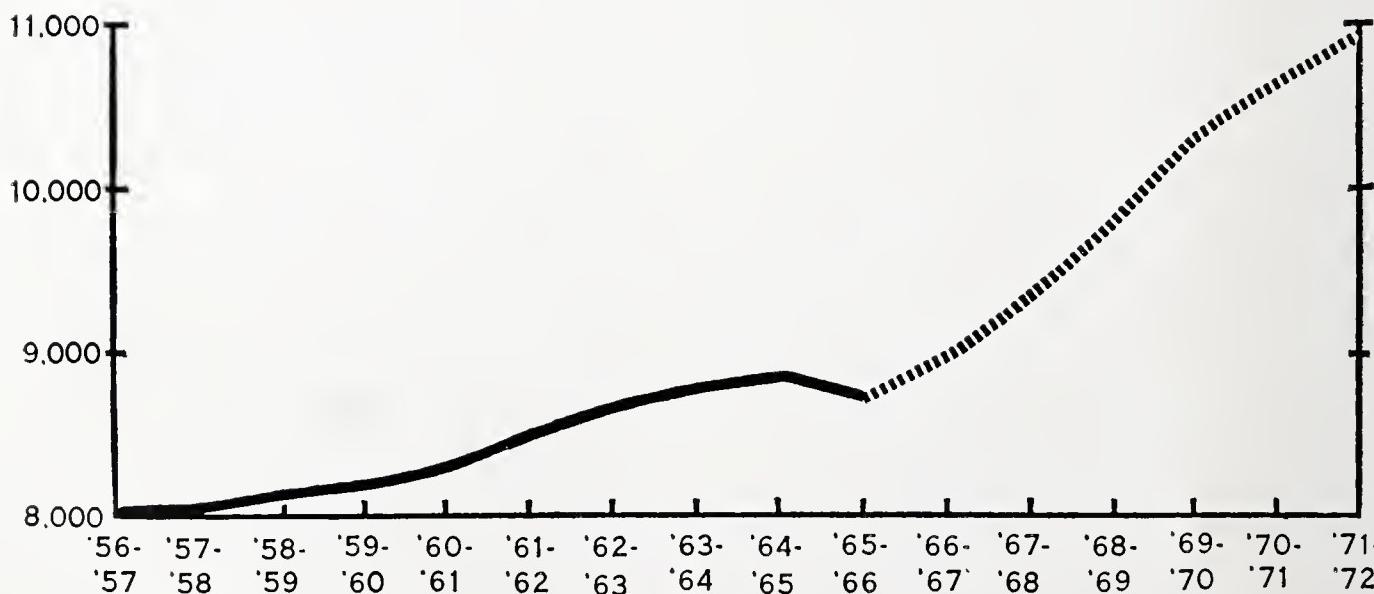


FIGURE 1  
First-year medical school enrollment 1956 to 1965 and estimates to 1971.

education of graduate and postdoctoral students, the conduct of research, the exemplary care of patients in the teaching hospital and clinics, the training of interns and residents, part or all of the education of several categories of allied health professionals, and the continuing education of physicians. It should not be surprising that many man hours are required for the detailed planning and construction of the facilities needed. In most cases, after firm decisions as to location have been made and funds for construction and for operation have been assured, it has taken about two years to complete the plans and about three years to construct and equip the facilities.

### TEACHING RESPONSIBILITY OF MEDICAL SCHOOL FACULTY

Faculty members in U. S. medical schools are responsible for the education and training of a sizable proportion of the nation's health manpower. In addition to the education of medical students, medical faculty assume responsibility for the total education and training of predoctoral students in the basic sciences, postdoctoral training in the basic and clinical sciences, and the training received by interns and residents serving

in teaching hospitals with major medical school affiliations. They also are responsible for the partial education and training of students of dentistry, pharmacy, nursing, and a wide array of health related technicians. For ease of comparison, the proportion of time and effort devoted to students receiving partial education by medical faculty is converted to an equivalency that is equal to the effort expended on full-time medical students. In academic year 1965-66, a total of 76,170 full-time student equivalents (including 32,835 medical students) received education and training in U. S. medical schools, as compared with the 40,750 (including 26,186 medical students) in academic year 1950-51. The number of full-time faculty in U. S. medical schools has increased from 3,933 in 1951 to 17,149 in 1966.

Figure 1 presents a comparison of the rate of numeric increase of full-time student equivalents, medical faculty, and medical graduates in the years 1950-51 to 1965-66 and projections to the years 1970 and 1975.

The rapid rate of growth of full-time faculty reflects several factors not directly related to increased teaching responsibility. In contrast with earlier periods when medical schools utilized large

TABLE I  
TRENDS IN MEDICAL SCHOOL ENROLLMENT, FACULTY AND GRADUATES,  
1950-65 WITH PROJECTIONS TO 1970 AND 1975

	1950-51	1955-56	1960-61	1965-66	1970*	1975*
No. of 4-year Schools	72	76	81	84	90	98
No. of 2-year Schools	7	6	4	3	5	4
Medical Student Enrollment	26,186	28,748	30,093	32,835	37,370	41,070
M.S. or Ph.D. Candidates	4,281	2,387	3,304	7,056	8,500	12,500
Postdoct. Students or Fellows	1,238	2,000*	4,317	5,014	8,500	12,500
Interns	1,786	2,094	3,727	3,963	4,573	4,862
Residents	4,259	6,192	13,273	15,987	18,407	19,568
Other Full-time Equivalents	3,000*	5,000*	8,743	11,315	13,650	16,500
Total Full-time Medical Student Equivalents	40,750	46,421	63,457	76,170	91,000	107,000
Ph.D. Degrees Awarded	225*	282	339	606	950	1,375
M.D. Degrees Awarded	6,135	6,845	6,994	7,574	8,800	9,450
U. S. Population in 1,000's	151,683	165,069	179,992	194,572	206,110†	220,133†
M.D. Grads./100,000 Pop.	4.04	4.15	3.89	3.89	4.27	4.29
Full-time Faculty	3,933	6,719	11,111	17,149	20,500	24,250
Student Equivalents						
Full-time Faculty	Ratio	9.9	6.9	5.7	4.4	4.4

\*Estimated.

†1960 Series C projection of population.

Submitted by the Division of Operational Studies.

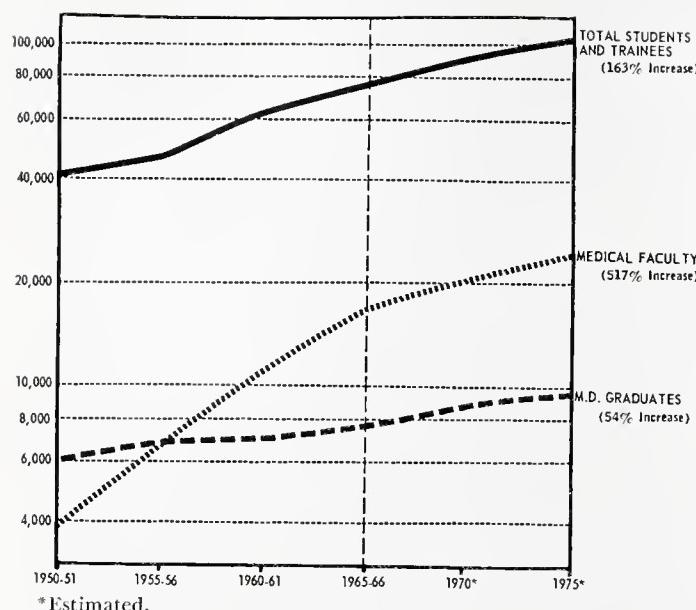


Fig. 1.

Number of total students and trainees, medical faculty, and M.D. graduates 1950-66 with projections to 1970 and 1975.

numbers of part-time faculty members, the schools have in the past ten years, increasingly relied on the employment of full-time faculty members to provide the major share of teaching responsibility. The efforts of a considerable number of full-time faculty members are devoted primarily to the research or patient care service functions performed by modern medical centers. Due to the expansion effect of these independent factors, comparisons of ratios of student to faculty are somewhat misleading in that they include faculty who have little teaching responsibility.

A detailed summary of the classifications of students receiving education or training by medical school faculty in the years 1950 to 1965 is presented in Table 1. In addition to providing the number of schools, faculty, U. S. population and various categories of students and graduates for whom medical faculty were responsible, this Table provides estimates for the years 1970 and 1975, based on projections of previous growth rates and the proposed addition of up to 15 new medical schools by 1975.

#### On the Cause of Ventricular Asystole During Vagal Stimulation

M. Vassalle et al (State Univ. of New York, Downstate Medical Center, Brooklyn) *Circ Res* 20: 228-241 (Feb.) 1967

In anesthetized dogs the vagus nerve was stimulated for two minutes; during the first minute the ventricles were driven at a rate higher than the control sinus rate; after discontinuation of the drive, the duration of asystole was prolonged.

When the ventricles were driven at a rate lower than the sinus rate during vagal stimulation, the subsequent asystole was shortened. Slowing sinus activity by graded vagal stimulation before maximal vagal stimulation led to a shorter asystole. Driving the ventricles at a rate higher than the sinus node rate before vagal stimulation resulted in longer asystole. In animals with chronic atrioventricular block, "overdriving" the ventricles resulted in subsequent temporary inhibition of ventricular pacemakers. In dogs with atrioventricular block, coronary sinus plasma potassium increased during the period of ventricular overdriving, and the magnitude of the rise was a function of the driving rate. Ventricular asystole probably results from the suppressive action of the fast rate imposed by the sinus node upon the slowly discharging ventricular pacemakers. Suppression of sinus node activity by the vagus reveals the rate-dependent inhibition of ventricular pacemakers. The mechanism of inhibition may be related to changes in ionic concentration gradients.

#### Procainamide Induced Lupus Erythematosus Syndrome

H. S. Sanford, A. K. Michaelson, and M. M. Halpern (16900 NE 19th Ave., North Miami Beach, Fla.) *Dis Chest* 51:172-176 (Feb.) 1967

Two patients, ages 69 and 74, developed lupus erythematosus syndrome in association with procainamide therapy. Symptoms developed 2 months and 11 month, respectively, after initiation of therapy and gradually subsided upon discontinuation of the drug together with corticosteroid therapy. Review of 12 other reported cases indicates that arthralgias and pleural pain are early and prominent symptoms and should alert the physician to this unusual drug reaction.

#### Acquired Extracardiac Causes of Pulmonary Ischemia

A. W. Templeton and L. J. Garrotto (Dept. of Radiology, Univ. of Missouri Medical Center, Columbia) *Dis Chest* 51:166-171 (Feb.) 1967

Pulmonary vascular ischemia may be associated with acquired extracardiac lesions such as primary pulmonary hypertension, multiple peripheral or main pulmonary artery saddle emboli, pericarditis, pericardial effusion, diffuse replacement of the liver, and obstruction of the inferior vena cava. Sixty-seven proved cases were studied and the occurrence of pulmonary vascular changes on plain roentgenograms of the chest was reviewed.

### Influence of Fatness on Plasma NEFA Response to Glucose Ingestion

T. Hanley, J. G. Lewis, and G. J. Knight (Wellcome Foundation Research Lab, Beckenham, England) *Metabolism* 16:324-333 (April) 1967

The response of the plasma nonesterified fatty acids (NEFA) concentration to ingestion of glucose has been studied in 59 persons who ranged from very obese to very lean. The results have been treated mathematically by a method of general application, which allows analysis of the relation between the blood glucose and NEFA curves as a whole, and of the influence exerted by fatness and age on these curves. The data show that adiposity has only minor effects on the form and magnitude of the NEFA response to glucose ingestion and influences chiefly that location of the response.

### Brain Tumors With Tuberous Sclerosis

J. P. Kapp, G. W. Paulson, and G. L. Odom (Box 3176, Duke Univ. Medical Center, Durham, N.C.) *J Neurosurg* 26:191-202 (Feb.) 1967

Seven cases of brain tumor associated with tuberous sclerosis are reviewed. The typical patient presented as a mentally retarded child with epilepsy and signs of increased intracranial pressure. A positive family history of tuberous sclerosis was not common, and adenoma sebaceum was usually, but not always, present at the time the tumor became apparent. Other skin lesions or retinal lesions were unusual; intracranial calcification was seen in only five cases. The tumors

were histologically similar, were composed of mixtures of spongioblasts and gemistocytic astrocytes, were located in the region of the foramen of Monro and resulted in noncommunicating hydrocephalus. Best results were obtained by resection of the tumor rather than by shunt procedures. It is to be anticipated, however, that most patients will remain mentally retarded because of the basic nature of the disease process.

### Bowen's Disease: Its Malignant Potential and Relationship to Systemic Cancer

N. E. Hugo and H. Conway (Dept. of Surgery, New York Hosp., Cornell Medical Center, New York) *Plast Reconstr Surg* 39:190-193 (Feb) 1967

Bowen's disease is a rare type of superficial intraepidermal carcinoma; only 38 patients with Bowen's disease have been seen at the New York Hospital of the Cornell Medical Center in thirty-three years. Although it rarely metastasizes to regional lymphatic nodes, it is associated with systemic cancer nine times more frequently than control groups of patients in the same age group but without Bowen's disease. The reason for the high degree of coexistence of Bowen's disease and internal malignancy is unknown. However, if arsenic is accepted as the etiologic agent of Bowen's disease, much of the controversy is solved. Apparently arsenic is a carcinogenic agent capable of exerting its effect on all tissues of the human body which are known to be sites of cancer.

### ANSWER—What's Your Diagnosis?

**DIAGNOSIS:** Sarcoidosis

**X-RAY FINDINGS:** There is a soft Reticulonodular infiltrate throughout both lung fields with marked enlargement of the peritracheal and peribronchial nodes.

### ANSWER—Electrocardiogram of the Month

**RATE:** 65    **RHYTHM:** Atrial fibrillation  
**PR:** —    **QRS:** .06    **QT:** .36

#### SIGNIFICANT ABNORMALITIES:

Atrial fibrillation  
 Low voltage extremity leads  
 Low to abnormally inverted T waves in all leads

#### INTERPRETATION:

Abnormal  
 Atrial fibrillation  
 Low voltage  
 Non-specific T abnormalities all leads

#### COMMENT:

The electrocardiographic changes noted are frequently found with constrictive pericarditis prior to surgical treatment.



## PERSONAL AND NEWS ITEMS

### Dr. Shukers Joins Clinic

Dr. Carroll F. Shukers II, who has practiced in Mt. Ida for the past six years, has been added to the staff of Dickinson Hospital and Clinic in DeQueen. Dr. Shukers is a graduate of the University of Arkansas Medical School.

### Dr. Thibault Injured

Dr. Frank Thibault of El Dorado suffered a broken leg in an automobile accident on Old Calion Road near Calion, Arkansas in June.

### Dr. Ellis Is Speaker

Dr. Michael Ellis of Pine Bluff discussed health care at a meeting of the Credit Women's Breakfast Club of Pine Bluff in June.

### Dr. and Mrs. Hesterly to Become Methodist Medical Missionaries

Dr. and Mrs. Charles Hesterly and family left Prescott, where Dr. Hesterly has been practicing medicine, in June to attend a New and Furlough Missionary Conference in Green Castle, Indiana. At this conference they received their medical missionary assignment which will be somewhere in the Orient. They will be at an orientation center at Stoney Point, New York until December 16th and will sail to their mission fields in January 1968.

### Drs. Announce Associate

Dr. Gene Ring and Dr. Jerome Luker have announced the affiliation of Dr. G. H. Ferrell with the Dardanelle Clinic in Dardanelle. Dr. Ferrell previously practiced in Rison, Arkansas.

### Meeting Held

The 74th annual convention of the Arkansas Medical, Dental and Pharmaceutical Association was held in June at Hot Springs. Physicians participating in the program included Dr. Robert Smith of Pine Bluff; Dr. U. S. Reed of Pine Bluff; and Dr. T. J. Collier of Hot Springs.

### Dr. Grasse Completes Trip

Dr. John M. Grasse of Calico Rock, who has

been a medical missionary to Nigeria and Puerto Rico, returned recently from a two-month trip to Vietnam, where he worked in a civilian hospital under the American Medical Association's "Project Vietnam" program.

### Dr. Lyford Drafted

Dr. J. H. Lyford of Conway has been drafted for duty with a branch of the armed forces. He reported July 1, 1967 for a two-year tour. He has been associated with the Conway Clinic since 1966.

### Dr. McClintock Discusses HOPE

Dr. Everett McClintock of Little Rock presented a lecture to the American Association of Retired Persons in June at Hot Springs. Dr. McClintock discussed the accomplishments and operation of the Good Ship HOPE, on which Dr. McClintock worked last year.

### Dr. Allen Instructs Nurses

Dr. John E. Allen, Jr., of Little Rock was the instructor at a Cardio-Pulmonary Resuscitation Course for licensed practical nurses in June at Rosewood Chronic Disease Hospital in Hot Springs.

### Dr. Laney Moves Office

Dr. J. Neal Laney, formerly associated with the Forrest View Clinic in Forrest City, has moved his office to 325 North Washington in Forrest City for the practice of medicine.

### Benton Gets New Doctor

Dr. Marvin N. Kirk, a native of Fort Smith, has assumed the practice of Dr. Donald Loveless in Benton. Dr. Loveless will begin practice in Tulsa, Oklahoma.

### Doctors Honored

Dr. S. T. Wallis Cull and the widow of the late Dr. David T. Hyatt were honored with Distinguished Service Awards at commencement ceremonies of the University of Arkansas School of Medicine in June. Dr. Cull, a retired internist,

and Dr. Hyatt, a cardiologist who died recently, were members of the voluntary staff at the Medical Center.

#### **Dr. Massey Elected to Society**

Dr. Lorenzo D. Massey of Osceola has been elected to membership in the American Society of Internal Medicine.

#### **Yearbook Dedicated to Dr. Smith**

Little Rock's Central High School 1967 yearbook, the PIX, was dedicated to Dr. John McCollough Smith of Little Rock who has been athletic team physician at the school for twenty-one years. Prior to that, his father was team physician for twenty-two years.

#### **Dr. DePalma Addresses Meeting**

Dr. Anthony DePalma, Fayetteville plastic surgeon, was guest speaker at a meeting of the Northwest Arkansas District Nurses Association at Fayetteville on June 5, 1967. His topic was "Scope of Plastic Surgery".

#### **Dr. Franklin Joins Clinic**

Dr. Robert Franklin has joined the staff of the Millard-Henry Clinic in Russellville. Dr. Franklin is a native of Magnolia, Arkansas and he has served internship and residency training at Baptist General Hospital in Memphis. Dr. Franklin is a general practitioner.

#### **Dr. Faris to Texarkana**

Dr. John C. Faris, physician and surgeon in Jonesboro for twenty-eight years, has closed his Jonesboro offices and accepted the position as chief surgeon to the Cotton Belt Hospital in Texarkana.

#### **Dr. and Mrs. Hesterly Entertain Lions Club**

Dr. and Mrs. Charles Hesterly, formerly of Prescott, entertained the Texarkana Lions Club in May. They gave an illustrated account of their lengthy visit in Tokyo, Japan.

#### **Dr. Walls Awarded**

Dr. Joseph T. Walls, formerly of Blytheville and a 1962 graduate of the University of Arkansas School of Medicine, recently was honored for outstanding performance in the Mayo Graduate School of Medicine in Rochester, Minnesota. A

chief resident in surgery at Mayo Clinic, Dr. Walls received a Surgical Travel Award for high achievement in surgery.

#### **Drs. Heidgen and Bachman are Speakers**

The annual meeting of the Arkansas Association of Medical Record Librarians was held in Russellville in May. Dr. Martin F. Heidgen of Russellville spoke at the meeting on disaster planning. Dr. D. S. Bachman of Russellville also spoke at the meeting. His topic was "Smoking and Its Related Diseases".

#### **Dr. Martin Opens Office**

Dr. Damon G. H. Martin began practice in his new office at Ola in May. Dr. Martin formerly practiced in Danville, Arkansas.

#### **Dr. McCrary Presents Diplomas**

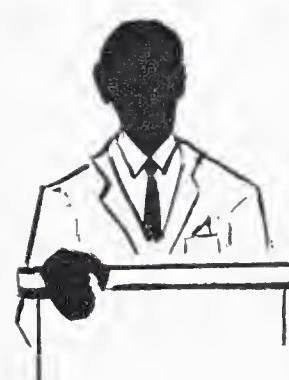
Dr. Robert F. McCrary of Hot Springs, a member of the school board, awarded the diplomas to members of the graduating class of Langston High School in May at Hot Springs.

#### **Dr. Hathcock's Clinic Damaged**

A clinic operated by Dr. Alfred Hathcock of Batesville was damaged by fire and smoke in May.

#### **Dr. Power Elected**

Dr. Allyn R. Power of Hot Springs was elected grand chancellor of the Arkansas Knights of Pythias at Little Rock in May.



## **PROCEEDINGS OF SOCIETIES**

#### **Boone County**

At the Third Annual Memorial meeting of the Boone County Medical Society held in May at Harrison, tribute was paid to a pioneer dentist and three doctor brothers, all of whom began their practice early in this century. Dr. Troy Coffman and Dr. J. Lex Moore presented the history of dentist John Edmond Andrews, and Dr.

Ross Fowler described the lives of his father and two uncles, Dr. Tilden Paul Fowler, Dr. James Henderson Fowler, and Dr. William Alonzo Fowler. A highlight of the program was a debate on the relationship between medicine and religion by Dr. Joseph Norton of Little Rock and the Reverend Joseph B. Tucker of Harrison.



## NEW MEMBERS

DR. LEON P. WOODS is a new member of Sebastian County Medical Society. A native of Muskogee, Oklahoma, he received his preliminary education from Northeastern State College at Tahlequah, Oklahoma. He obtained his M.D. degree from the University of Oklahoma School of Medicine in 1956 and he interned at the U. S. Public Health Service Hospital in San Francisco, California. He served in the U. S. Public Health Service from 1956 until 1959. He was assistant professor of surgery at Duke University from 1964-1966. Dr. Woods is a thoracic surgeon and he is associated with Holt Krock Clinic in Fort Smith.

A new member of Cleburne County Medical Society is DR. CLIFTON HAROLD BEASLEY, a native of Cabot, Arkansas. He received his pre-med from the University of Arkansas and in 1941 he received his M.D. degree from the University of Arkansas School of Medicine. He interned at the University of Arkansas Medical Center and completed residency training at St. Louis City Hospital in St. Louis, Missouri. He served in the U. S. Air Force from 1942-1946. He practiced for seventeen years at Fort Worth, Texas. Dr. Beasley's specialty is ophthalmology and his office address is 103 North Sixth in Heber Springs, Arkansas.

## BOOK REVIEWS

*INFANT NUTRITION*, Samuel J. Fomon, M.D., W. B. Saunders Company, Philadelphia & London, 1967.

This text is of a very slight change but is of interest to the medical student, general physician and pediatrician. There is nothing particularly new in the text. On the other hand it is up-to-date and well written. There are a large number of references at the end of each chapter. There are a moderate number of charts.

*PATHOLOGY*, by Stanley L. Robbins, M.D., Professor and Chairman, Department of Pathology, Boston University School of Medicine; Director of the Mallory Institute of Pathology of the Boston City Hospital, Boston, Massachusetts; Lecturer, Harvard Medical School and Tufts University School of Medicine, 3rd edition, illustrated, published by the W. B. Saunders Company of Philadelphia and London, 1967.

This textbook of Pathology is quite complete. It is well illustrated and has adequate references. It is organized along conventional lines. It contains a chapter on neuropathology. Of particular interest at the present time is the chapter on diseases of immune origin. Only brief reference is made to electron-microscopy, and the reviewer feels that this would be a worthwhile addition to the text. This book is recommended as being a very worthwhile text in pathology.



### Dietary Lipids and Coagulation

B. W. Jarvis (Dept. of Pathology, Baylor Univ. College of Medicine, Houston) *Arch Path* 83: 364-369 (April) 1967.

Hypercoagulability of the blood of hyperlipemic rats was demonstrated by the use of the thrombotest of Owren and the partial thromboplastin time, confirming the results of other investigators. The decreased clotting time is readily demonstrable by the sixth day of special diet. When the animals are returned to the "chow" diet, the abnormally decreased clotting time returns to normal in eight days. The shortening of the clotting time and its return to normal occur parallel to changes in serum cholesterol levels, but the degree of shortening of the clotting time is not closely related to the amount of increase in cholesterol. The fibrinogen level is elevated by the sixteenth day of the special diet, and rapidity of clot retraction is increased at approximately the same time.

# T U B E R C U L O S I S



## A B S T R A C T S

Sponsored by Arkansas Tuberculosis Association

### CONTROL OF TUBERCULOSIS

*Despite improved methods of detection and treatment, tuberculosis remains the most common cause of death from infectious disease in the United States. The tuberculin test is an important tool in detecting infection, and drugs are the foundation of treatment.*

Each year approximately 1,800 cases of tuberculosis are first reported at death in the United States. In 1964 tuberculosis had dropped to the 20th place as a cause of death, but it is still the most common infectious cause of death not only in the United States but also throughout the world.

Recent carefully planned studies indicate that tuberculous patients receiving modern chemotherapy rapidly become relatively noninfectious to persons in their immediate environment, even though their sputum smears and cultures remain positive. While the studies do not prove that these patients are completely noninfectious, they do justify a change in attitude about prolonged hospitalization. Thus, today tuberculosis treatment can be initiated in tuberculosis wards in general hospitals and continued in clinics outside the hospital.

The tuberculin test has become a valuable tool in tuberculosis detection, especially in the young. In populations with high incidence, X-ray surveys still have a place. Family contacts of newly discovered open cases of tuberculosis are the most productive source of new cases. Many cases are also found in X-ray surveys of inmates of jails, mental institutions, and nursing homes.

Case detection in populations of low incidence ideally should consist of an annual tuberculin test, and X-rays of those who become positive. After age 35, people should have an annual X-ray regardless, because of the additional yield of other unsuspected diseases.

The best screening tuberculin test is the Mantoux, using intermediate-strength PPD. The tine

test and Heaf test are almost as reliable.

### STANDARD DRUG TREATMENT

In the treatment of tuberculosis three drugs constitute "standard chemotherapy." These are isoniazid, streptomycin, and PAS (paraminosalicylic acid). Results with regimens of all three drugs are probably no better than a regimen of streptomycin and isoniazid. A regimen of isoniazid and PAS is often chosen because drug toxicity is less with this combination than with the other two.

The arguments for an initial three-drug regimen are: (1) When patients have primary resistance to one drug, there is an advantage in the three-drug regimen because the patient's bacilli will be susceptible to at least two; (2) Rapid reversal of infectiousness has the theoretical advantage of reducing the chance of emergence of a clinically significant population of drug-resistant organism.

In original-treatment cases, drug therapy should be continued for a minimum of 18 months. For patients who have slow reversal of infectiousness, frequent interruptions of drug-taking, less than optimal drug selection or dosage, and sometimes patients with very severe disease, chemotherapy should be continued two to three years or more.

The dosage of isoniazid recommended by many authorities is 200 to 400 mg. per day. Larger doses, 400 to 1,800 mg. a day, depending on body weight, are recommended by a few observers.

When streptomycin is included in the drug regimen, it is generally accepted that it should be given once daily for at least 30 days, often for 90 days, or until reversal of infectiousness by culture. This drug should be stopped at first sign of vestibular toxicity.

PAS dosage consists roughly in 200 mg. of sodium or calcium PAS per kilogram of body weight per day, or 100 to 150 mg. of acid PAS per kilogram a day, divided into two or three doses. Non-sodium containing PAS must be used in older patients who are or may be in marginal compensa-

Roger S. Mitchell, M.D., *The New England Journal of Medicine*, April 13 and 20, 1967.

tion of the heart.

#### *RETREATMENT DRUGS*

Retreatment drug therapy consists of the use of ethionamide, pyrazinamide, ethambutol, capreomycin, kanamycin, cycloserine, viomycin, and thiacetazone (TB-1). Retreatment should always be initiated in the hospital.

In persons who have never received any of these drugs, it is relatively easy to choose two or three previously unused drugs that the patient can tolerate. Preferably only one drug used should be an antibiotic absorbed only by the parenteral route (kanamycin, viomycin, capreomycin) since combined use of these agents increases the risk of vestibular or auditory toxicity. Ethambutol and capreomycin are not yet available for general use.

Other forms of treatment of tuberculosis include rest, collapse and resection, but should be considered as *adjuvants to chemotherapy*. It has been established that rest is not necessary in conjunction with modern primary chemotherapy. This may be true also of retreatment chemotherapy. Rest is indicated when patients feel tired, are actively sick with fever, have constitutional symptoms or hemorrhage, or are not receiving effective chemotherapy.

The adjunctive use of corticosteroids with anti-tuberculosis chemotherapy is common practice in tuberculous meningitis. When corticosteroids are administered to seriously ill patients, they should be continued for from two to three weeks and then gradually reduced in amount.

The principal causes of chemotherapy failure

are the use of too few drugs and interruptions in drug therapy. The essential ingredient in anti-tuberculosis chemotherapy is that drugs be taken as prescribed.

Preventive treatment is an important control measure among persons who are tuberculin positive but do not have clinical tuberculosis. Children under five years of age with a positive tuberculin reaction should be considered to have clinical tuberculosis and be so managed. Persons with a positive tuberculin reaction and inactive tuberculosis are also candidates for preventive treatment.

Preventive treatment usually consists of the use of isoniazid alone in conventional doses. Maximum benefit has been observed during the period of drug administration in trials of preventive treatment.

BCG vaccination is both effective and safe. It does not provide complete protection. Because its use is expensive and time-consuming, it must compete with other methods of control for the time and money available. In most of the United States the risk of exposure to tuberculosis has reached a level sufficiently low so that the expenditure of time and money on BCG programs is not considered as effective as expending the same amount of time and money on tuberculin testing and treating certain reactors, X-ray screening of special groups, examination of contacts of patients, and most of all thorough treatment of known active cases.



#### **Effect of Cortisone on PBI and Resin Uptake of $^{131}\text{I}$ -Tri-iodothyronine**

B. Blomstedt and J. Einhorn (Karolinska Hosp., Stockholm, Sweden) *Metabolism* 16:319-323 (April) 1967

The effect of large doses of cortisone on the protein-bound iodine in the total volume of serum and the resin sponge uptake of  $^{131}\text{I}$ -triiodothyronine was examined on euthyroid subjects. During administration of cortisone the mean serum volume increased by 21% ( $P < 0.001$ ). PBI, determined in a given volume of serum, decreased

significantly, but the amount of PBI in the total volume of serum remained unchanged. The resin sponge uptake decreased, but the decrease was lower than expected from simple dilution of serum, which suggests that the amount of thyroxine-binding proteins in the whole volume of serum might have increased during the administration of cortisone. This is supported by an observed increase by 13% in the total amount of protein in the whole serum volume. Three days after withdrawal of cortisone the serum volume, PBI, resin sponge uptake, and total serum protein had normalized.

October, 1967

# THE JOURNAL OF THE Arkansas MEDICAL SOCIETY

Vol. 64 No. 5

FORT SMITH, ARKANSAS

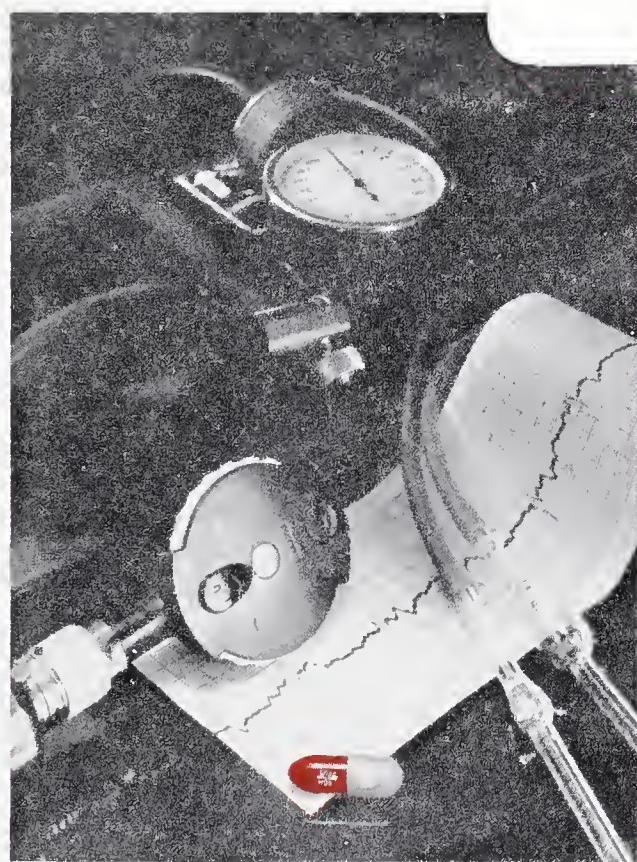
Medical School Library  
University of California  
San Francisco, California

U.C. MEDICAL CENTER LIBRARY

OCT 16 1967

San Francisco 22.

SH12



Among the adjuncts to the physician's skill

## Darvon® Compound-65

Each Pulvule® contains 65 mg. propoxyphene hydrochloride, 227 mg. aspirin, 162 mg. phenacetin, and 32.4 mg. caffeine.



Additional information available to the medical profession upon request.  
ELI LILLY AND COMPANY, INDIANAPOLIS, INDIANA 46206  
701133

# Dilantin®

(diphenylhydantoin)

PARKE-DAVIS

**In untold thousands of  
epileptic patients...  
Dilantin has been, and  
continues to be, the  
bedrock of therapy.**

DILANTIN is useful in the treatment of grand mal epilepsy and certain other convulsive states. Its use will prevent or greatly reduce the incidence and severity of convulsive seizures in a substantial percentage of epileptic patients, without the hypnotic and narcotizing effects of many anti-convulsant drugs.

**PRECAUTIONS:** Periodic examination of the blood is advisable. Nystagmus in combination with diplopia and ataxia indicates dosage should be reduced. The possibility of toxic effects during pregnancy has not been explored.

**ADVERSE REACTIONS:** Allergic phenomena such as polyarthropathy, fever, skin eruptions, and acute generalized morbilliform eruptions with or without fever. Rarely, dermatitis goes on to exfoliation with hepatitis, and further dosage is contraindicated. Gingival hypertrophy, hirsutism, and excessive motor activity are occasionally encountered. During initial treatment, side effects may include gastric distress, nausea, weight loss, nervousness, sleeplessness, feeling of unsteadiness. Macrocytosis, megaloblastic anemia, leukopenia, granulocytopenia, thrombocytopenia, pancytopenia, agranulocytosis, and aplastic anemia have been reported. Nystagmus, lymphadenopathy, lupus erythematosus, erythema multiforme (Stevens-Johnson syndrome), and a syndrome resembling infectious mononucleosis with jaundice have occurred.

DILANTIN is supplied in several forms including Kapseals® containing 0.1 Gm. and 0.03 Gm. diphenylhydantoin sodium.

Parke, Davis & Company, Detroit, Michigan 48232

The color combinations of the banded capsules are Parke-Davis trademarks. The orange-banded white capsule identifies Parke-Davis 0.1 Gm. diphenylhydantoin sodium; the pink-banded white capsule 0.03 Gm. diphenylhydantoin sodium.

**PARKE-DAVIS**

015R67



# **BSP® DISPOSABLE UNIT**

**HW&D BRAND OF SODIUM SULFOBROMOPHTHALEIN INJECTION, USP**

(50 mg. per ml.)



BROMSULPHALEIN®  
IN A COMPLETE,  
STERILE,  
DISPOSABLE,  
& ECONOMICAL  
PATIENT-UNIT.

BSP, one of the more valuable single laboratory procedures for determining hepatic function, is now packaged in a complete individual patient-unit.

Each BSP Disposable Unit contains a sterile syringe with the 5 mg./kg. BSP dosage schedule imprinted on the barrel, a sterile needle, alcohol swab and a 7.5 ml. or 10 ml. size ampule of terminally sterilized Bromsulphalein solution.

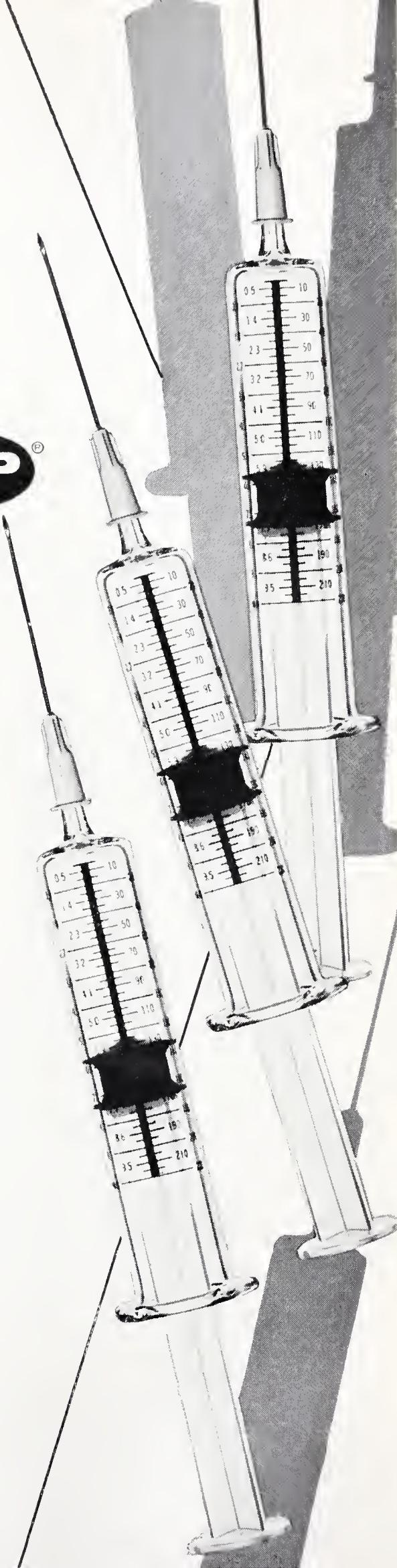
This all-inclusive disposable put-up lessens the chance of cross-infection and saves time and labor—the most costly commodities.

**HYNSON, WESTCOTT & DUNNING, INC.**

BALTIMORE, MARYLAND 21201



(BSPD3)



**THE  
JOURNAL OF THE  
Arkansas  
MEDICAL SOCIETY**

Owned by

**THE ARKANSAS MEDICAL SOCIETY  
And Published Under Direction of the Council**

**ALFRED KAHN, JR., M.D., Editor  
1300 West Sixth Street Little Rock, Arkansas**

**MR. PAUL C. SCHAEFER, Business Manager  
218 Kelley Bldg. Fort Smith, Arkansas**

**LITTLE ROCK BUSINESS OFFICE  
114 E. Second St. Little Rock, Arkansas**

**OFFICERS OF THE ARKANSAS MEDICAL SOCIETY**  
 JOSEPH A. NORTON, President ..... Little Rock  
 H. W. THOMAS, President-Elect ..... Dermott  
 JEROME LEVY, First Vice President ..... Little Rock  
 DAVID H. PONTIUS, Second Vice President ..... West Memphis  
 GEORGE F. WYNNE, Third Vice President ..... Warren  
 ELVIN SHUFFIELD, Secretary ..... Little Rock  
 W. R. BROOKSHER, Secretary Emeritus ..... Fort Smith  
 BEN N. SALTZMAN, Treasurer ..... Mountain Home  
 JOHN P. PRICE, Speaker, House of Delegates ..... Monticello  
 AMAIL CHUDY, Vice Speaker,  
     House of Delegates ..... North Little Rock  
 ALFRED KAHN, JR., Journal Editor ..... Little Rock  
 JAMES M. KOLB, SR., Delegate to AMA ..... Clarksville  
 JACK KENNEDY, Delegate to AMA ..... Arkadelphia  
 C. C. LONG, Alternate Delegate to AMA ..... Ozark  
 ALFRED KAHN, JR., Alternate Delegate to AMA ..... Little Rock  
 MR. PAUL C. SCHAEFER, Executive Vice President,  
     P.O. Box 1208 ..... Fort Smith

**COUNCILORS**

First District	ELDON FAIRLEY	Osceola
	B. P. RANF	Jonesboro
Second District	PAUL GRAY	Batesville
	HUGH R. EDWARDS	Searcy
Third District	PAUL MILLAR	Stuttgart
	L. J. P. BELL	Helena
Fourth District	T. E. TOWNSEND	Pine Bluff
	LEE B. PARKER	McGehee
Fifth District	KENNETH R. DUZAN	El Dorado
	PAUL SIZEMORE	Magnolia
Sixth District	KARLTON H. KEMP	Texarkana
	JOHN P. WOOD	Mena
Seventh District	JACK KENNEDY	Arkadelphia
	ROBERT F. McCRARY	Hot Springs
Eighth District	WILLIAM PAYTON KOLB	Little Rock
	JAMES R. MORRISON	Little Rock
Ninth District	STANLEY APPLEGATE	Springdale
	ROSS FOWLER	Harrison
Tenth District	C. C. LONG	Ozark
	A. S. KOENIG	Fort Smith

The Advertising policy of this JOURNAL is governed by the PRINCIPLES OF ADVERTISING of the State Medical Journal Advertising Bureau, Inc., by the Advertising Committee of the Bureau and by the Council of the Arkansas Medical Society.

*EXCLUSIVE PUBLICATION—Articles are accepted for publication on the condition that they are contributed solely to this JOURNAL.*

*COPYRIGHT 1967 — By the JOURNAL of the Arkansas Medical Society.*

*NEWS—Our readers are requested to send in items of news, also marked copies of newspapers containing matter of interest to the membership.*

**SCIENTIFIC ARTICLES**

The Pioneer Doctors Fowler ..... 175  
*Ross Fowler, M.D.*

Malignancy in the Gastric Ulcer ..... 178  
*William R. Christensen, M.D.*

Effects of Chloramphenicol on  
 Mammalian Blood Cells ..... 181  
*Orville Neufeld and Calvin Hanna*

Anti-Inflammatory Actions of  
 Indomethacin in the Eye ..... 183  
*Calvin Hanna*

**FEATURES**

What Is Your Diagnosis?	185
EEG of the Month	186
Arkansas Public Health at a Glance	187
Editorial	190
Medicine in the News	191
Announcements and Things to Come	194
Personal and News Items	195
Proceedings of Societies	197
Obituary	198
New Members	199
Women's Auxiliary	199
Book Reviews	200
TB Abstracts	201

## THE PIONEER DOCTORS FOWLER

Ross Fowler, M.D.\*

**I**t is indeed an honor for the Fowler family for the Boone County Medical Society to honor the pioneer Drs. Fowler with this memorial today.

When I was asked to take part in this program my first thought was why three children out of a family of ten children, raised on a poor farm at Rally Hill, Arkansas, 12 miles east of Harrison, and with no financial assistance from their family, would undertake to study medicine.

It is said that to understand the child one should study the parent: The father of the pioneer Drs. Fowler, Pleasant Fowler was born February 6, 1831, in Orange County, North Carolina. The rolling hills of this county are very similar to the hills of Boone County. It had better than average educational facilities, the University of North Carolina being located there in 1795. At the age of 19, in 1850, Pleasant Fowler moved with his family to Western Grove in Newton County, Arkansas, where he obtained a Post Office and became the first Postmaster. Boone County was not created until April 9, 1869, nineteen years later. He was commissioned a colonel of the Arkansas Militia in 1860 in preparation for the Civil War and fought in several battles, including Pea Ridge, Iuka, Corinth and Port Hudson. He was taken prisoner at Port Hudson, Miss. and spent two years as a prisoner of war on Johnson Island at Sandusky, Ohio. Here he developed a chronic diarrhea which he treated with scrapings from a ball of opium which he kept concealed in his possessions. He felt that this medication saved his life.

While a prisoner he read most of the time and was associated with educated southern officers. This aided in his education. He brought back a trunk full of books which were being discarded by the prisoners when they left Johnson Island.

After discharge from the Army, he married Martha Elizabeth Wilson in 1870 and settled on a farm at Rally Hill, Arkansas. Of this union ten

children were born. Although his schooling was limited, Pleasant Fowler was well educated and an excellent pensman. He did most of the correspondence for his neighbors in the community.

He believed the parent to be responsible for the childrens' education. He assisted in building Rally Hill Academy and in developing it into an excellent school by hiring the best teachers available. This academy was the center of education in this community for more than twenty years.

Among the Fowlers' personal friends were the doctors in this area. They often visited in the family home as well as treating them during their illnesses. One of these was Dr. John Guy Hale who was a graduate of the Michigan School of Medicine and who married a Fullbright of Valley Springs. Several doctors served as preceptors under Dr. Hale. Other friends were Dr. Leonidas Kirby and J. J. Johnson of Harrison, Dr. Singletary of Rally Hill, and Dr. Pollock of Valley Springs. The close association with these doctors no doubt influenced the Fowlers to some extent to study medicine.

James Henderson Fowler, the oldest of the three Drs. Fowler, was born at Rally Hill, January 22, 1875. Never a strong child, he developed osteomyelitis about the age of 9 years and was bedridden as an invalid until about 17 years old. He was left permanently crippled. He endured much suffering and spent many hours reading and studying while other children were out playing. He learned to amuse himself by playing several musical instruments and would often play at parties so others could dance. His long illness taught him patience, endurance of pain and deep compassion for the suffering of others. He was determined to alleviate the suffering of others and help them in any way that he could.

To finance his medical education, Dr. Jim taught at several different country schools. He graduated from Memphis Medical College in 1907 at the age of 33. On display here today is a picture of his graduating class. He married Nancy

\*213 West Stephenson Ave., Harrison, Arkansas.

McAlpin of Rally Hill and began his practice at Gaither, Arkansas. While there he developed the first telephone system in that community. The switchboard was located in his home. Each family was assigned a particular ring, but everybody listened in. When Dr. Jim moved to Harrison in 1908 he was instrumental in starting the Boone County Telephone Company. He continued his practice in Harrison until his death in 1944.

Much of Dr. Jim's surgery was performed in the patient's home under very crude conditions. The instruments were boiled on the kitchen stove and cotton and sheets were baked in the oven for sterilization. Frequently flashlights were used, or the patient was placed near the window providing the best light. He traveled by horseback and buggy before acquiring a car.

He was a staunch and loyal member of the Arkansas Medical Society and attended the meetings as long as he was able. He was a charter member of the Harrison Lions Club, an active member of the Christian Church and an avid sports fan.

Dr. Jim suffered a great disappointment at the death of his only son at the age of 16 years from acute leukemia. He is survived by two daughters, Mrs. Ora Lee Riggs of Little Rock, and Mrs. Ernest B. Wilson of Harrison.

The second of the Drs. Fowler was my father, Tilden Paul Fowler, who was born at Rally Hill September 18, 1876. He too attended the Rally Hill Academy. He taught school and worked at laying rails on the M. and N.A. Railroad for \$1.00 a day to earn his tuition fees in medical school. He debated whether to use his savings to buy a team and thus have his earnings increased to \$2.00 a day or to go on to Medical School. He attended Arkansas Medical School in Little Rock and was licensed to practice medicine in 1903.

He married Mitty Rowan of Rally Hill and began his practice on Cave Creek at Bass, Arkansas. When Dr. Jim moved to Gaither, dad moved there.

My father worked long hours as a typical doctor of his time, doing the common things uncommonly well. He traveled many miles by horseback and often relied on his horse to find the way back home while he dozed in the saddle. He packaged his powdered medicine in individual doses and the few medicines he had were carried in a saddle bag. He sat many hours with his patients and

frequently spent all day or all night in the patient's home. He was always gentle, often teasing for a laugh, ever optimistic and hopeful, giving reassurance and hope to the family as to the patient. He was a master at the practice of psychosomatic medicine. He was much loved by his patients because he loved people. Dad believed that if you could not say something nice about someone it was better not to say anything at all.

He took his patients on faith, believing that they would pay when able. His ledger reflected a generous helping hand to the whole community. He moved to Harrison in 1915 and opened an office in the Security Bank Building. He treated Henry Starr when he was shot robbing the bank. He enjoyed strong family ties and reared six children. He offered his children the opportunity and encouragement to get all the education each would accept, and although he did not live to see them all finish their education, he had arranged funds for finishing it.

Dad never begrudged his long hours of hard work. He was stricken and died while making a night call across Gaither Mountain July 5, 1943.

The third doctor son of Colonel Pleas Fowler is William Alonzo Fowler, who was born at Rally Hill, July 29, 1884. He too attended Rally Hill Academy and taught several years of school. The first school was at Silver Hill where for several years the bullies had made it impossible for a teacher to finish a term. By applying the rod and by sheer determination, he finished a term. Before entering Peabody College in 1902 he had taught five schools and was to teach three more during his college years at salaries from \$20.00 to \$60.00 a month and for terms of from three to eight months each. After attending Peabody College, he entered Nashville Medical School and finished in 1908, third in his class of 70. He interned at Bellevue Hospital in New York and took residency training at the Lying In Hospital in New York City and at the St. Mary's Hospital in Hoboken.

After leaving New York he took over a doctor's practice for three months at Marion, Arkansas, doing general practice and covering long distances on horseback. Following this he moved to Oklahoma City where he became affiliated with the Oklahoma Medical School, being named Director of the Outpatient Obstetrical Clinic. About this time he married Miss Virginia Tolbert of Hobart, Oklahoma, a registered nurse at the University

of Oklahoma Hospital. They have three children, a son and 2 daughters.

In 1926 because of encephalitis, he was forced to close his hospital and quit his practice. He was a member of the Academy of Medicine of Oklahoma City, member of the American College of Surgeons, American Association of OB, Gyn and Abdominal Surgeons; was Clinical Professor of Obstetrics and Head of the OB service at the University of Oklahoma Hospital.

After regaining his health, he moved to Fayetteville and opened an office doing General Practice for 24 years. From 1937 to 1943 he was Director of Student Health at the University of Arkansas.

July 29, 1966, on his 82nd birthday, he retired. There is nothing he would enjoy more than to be with us on this occasion, but not being physically able to attend, he sends his kindest regards to all of you.

Grandma Fowler rolled her wool, spun it into yarn, knitted it into a pair of socks which she then traded to Mr. W. C. Brumley for an 1880 Blue Back Speller. This now belongs to Palmer Fowler and is on display here today. This trade emphasizes the desire for knowledge, the determination, the good judgment, and the business ability characterized in the Pioneer Doctors Fowler.



#### **Basic Protein of Normal Human Plasma**

T. Iwasaki and K. Schmid (Boston Univ. School of Medicine, Boston Univ. Medical Center, Boston) *Nature* 213:522 (Feb. 4) 1967

The purification and partial characterization of one of the basic proteins,  $B_2$ , are described. The basic protein,  $B_2$ , was characterized in terms of some of its major physical chemical and chemical properties. Its molecular weight determined by the Yphantis procedure was found to be approximately 9,000. On ultracentrifugation  $B_2$  sedimented at the rate of 1.3S. The isoelectric point of this protein was estimated to be between pH 10.0 and 10.5. Ultraviolet absorption indicated a very low content of tyrosine or tryptophan or both. Chemical analysis of  $B_2$  showed that its polypeptide moiety accounted for the total weight. Independent measurements confirmed the lack of neutral hexoses, hexosamines, and sialic acid.

#### **Ceroid-Induced Atrophy of the Large Bowel and Rectum**

D. F. Coletta and A. Nedwich (Memorial Hosp., Roxborough, Philadelphia) *Amer J Proctol* 18:48-54 (Feb.) 1967

Observation of atrophy and brownish-tan discoloration of the wall of the gastrointestinal tract has been reported occasionally. Biopsies studied by light and electron microscopy, in addition to histochemical studies, have demonstrated the presence of a pigment which was identified as a lipofuscin and was responsible for these changes. The term ceroid has been used frequently in literature in reference to this pigment. These gross findings have been described in malabsorption states, vitamin deficiency states, mucoviscidosis, cachexia; less frequently in cirrhosis and pancreatitis. Four such cases with extensive involvement of the gastrointestinal tract are presented.

# Malignancy in the Gastric Ulcer

Wm. R. Christensen, M.D.\*

Although the gastric ulcer is a common and well recognized disease entity, its management still presents a major problem in medical practice.<sup>1,2</sup> In final analysis, a valid approach to treatment rests primarily upon an accurate decision regarding the presence or absence of malignancy. Whereas hemorrhage, intractability, perforation, and recurrence may become very important considerations and dictate therapy, the possibility of malignancy is the overriding consideration. Serious probability of carcinoma of the stomach, of course, dictates a surgical approach.

Despite the importance of this problem, there have been relatively few recent studies of the accuracy of differential diagnosis and the actual incidence of malignancy in the simple gastric ulcer.<sup>3,4,5</sup> Many radiologists have felt that considerations of size, shape, position, peristalsis, Hampton's line, Carmen's sign, the presence or absence of a soft tissue mass, the character of the mucosal relief, etc. provide a reasonable basis for an accurate diagnosis. The ultimate accuracy of these criteria, however, has never been established. The role that the radiologist can play has never been clearly defined.

With these problems in mind, we have recently begun an investigation of our local case material. The total comprises over 400 gastric ulcers seen during the last ten years at the Salt Lake County General Hospital, University Hospital, Fort Douglas Veteran's Administration and Cottonwood Hospital. A wide spectrum of practice extending from the aged, indigent, to the young private patient, therefore, has been included.

Our major initial problem, of course, involved a decision as to what should be accepted as diagnostic criteria. The casual experience of the last few years has clearly indicated that size, and location were of very little help. After considerable debate, it was decided that the only absolute criterion on which the diagnosis of malignancy in a gastric lesion could be based was the demonstration of a "soft tissue mass." Succinctly stated, if a soft tissue mass was present, the ulcer was malignant; if no soft tissue mass was demonstrated, the lesion was benign. Such a decision represented a composite evaluation which included considera-

tion of mucosal relief, peristaltic activity, symmetry of the crater, flexibility of mucosa, thickness of the gastric wall, size of inflammatory cuff, etc. It emerged as a single, simple decision—benign or malignant. However, no ulcer was called malignant unless a soft tissue mass was cleanly and clearly demonstrable.

When did these cases become definitive? The following standards were accepted:

1. autopsy, with pathological exam-benign or malignant
2. surgery, with pathological exam-benign or malignant
3. complete healing on follow up at least two months after initial exam-benign
4. two year follow up, patient in good health and no specific complaints-benign

Some question might be raised in regard to the latter two categories. In our opinion there is substantially no possibility of error in either instance. Complete healing has long been accepted as proof of benignity. An asymptomatic two year follow up in untreated carcinoma of the stomach must be exceedingly rare.

Having established these basic working guidelines, the individual investigators proceeded to analyse the assembled cases of gastric ulcer. Films were sorted and a final judgment made without reference to the previous radiological diagnosis or clinical information. Cases considered to show a soft tissue mass were judged malignant and thereupon removed from further consideration. Benign lesions were checked for clinical course through examination of the patient's clinical record. Again, those cases which could not meet the criteria established above were considered "non definitive" and discarded.

Our examination and analysis of all ulcers available is not yet complete. At present the series

TABLE I  
BASIS OF DIAGNOSIS

	Number
1. Surgery c path. examination	100
2. Autopsy examination	30
3. Complete healing + 2 year follow-up	64
4. 2 year follow-up	3
5. Complete healing	42

This paper represents the combined efforts of Drs. Carlisle C. Smith, David W. Stowell, Richard H. Keller, Wm. R. Christensen,  
\*Utah College of Medicine, Salt Lake City, Utah 84112.

comprises 239 definitive cases.

The basis of determination of the diagnosis is listed in Table I.

The final diagnoses are summarized in Table II.

TABLE II

## Summary—DIAGNOSIS IN GASTRIC ULCER

Dx.	No.
Benign	235
Malignant	4
1. Adenocarcinoma	3
2. Reticulum Cell Sarcoma	1

Of the total of 239 gastric ulcers, characterized "by the absence of a soft tissue mass" 235 were benign and four malignant.

The malignant ulcers merit special consideration. All were on the lesser curvature. One, the reticulum cell sarcoma, was of large size, measuring 6 cm. in transverse diameter. This lesion caused some controversy in that one member of the evaluation group felt that it showed some evidence of a soft tissue mass. Three others disagreed and it was retained, therefore, in the simple ulcer group. This is the only instance in the



Figure II

## Malignant Ulcer

(Cross appearance of ulcer in Fig. I)

entire series in which a difference of opinion arose.

The three remaining malignant lesions were all adenocarcinoma. They measured 2 cm., 2 cm., and 1 cm. in transverse diameter respectively. The patient with the 1 cm. ulcer was not operated upon until widespread carcinomatosis had developed. The ulcer persisted for a year without striking change. Even at the end of one year there was no obvious soft tissue mass.

The two remaining ulcers were surgically excised. In both instances they were considered to be grossly benign and were described initially as simple ulcers. Only after careful microscopic studies, were malignant extensions found at the bases of the ulcers. The clean, symmetrical outline is well illustrated radiographically in Fig. 1 and grossly in Fig. 2 in the case of one of these lesions. In retrospect, it appears that there was no definable clue whereby the diagnosis could have been made in any of these three cases.

The 235 benign lesions present a most unusual spectrum. They include a complete range of size up to 6 cm. in transverse diameter. Ulcers were found in all areas of the stomach—prepyloric, antral, lesser curvature, and greater curvature. The depth of the ulcers was unusually variable. In all instances the mucosal relief was intact up to the edge of the crater. A distinct inflammatory cuff was common. Carman's sign was not considered to constitute evidence of a soft tissue mass.

As a result of a study of approximately 300 gastric ulcers diagnosed in Utah hospital practice, the following conclusions appear to be justified.

1. In a very few instances, it is impossible for the radiologist to distinguish between benign and



Figure I  
Malignant Ulcer

## MALIGNANCY IN THE GASTRIC ULCER

malignant lesions. A very small percentage of malignant ulcers appear benign in all respects.

2. If the absence of a soft tissue mass is used as the sole criterion for benignity, the percentage of error in the diagnosis of benign gastric ulcer is less than two.

3. Size, position, depth, and peristaltic activity do not appear to be valid clues for evaluation of gastric ulcers.

### REFERENCES

1. Brooks, John R. & Eraklis, A. J., Factors Affecting the Mortality from Peptic Ulcer. *New Eng. J. Med.*, 271: 803-809, 1964
2. Strode, J. E., Early Surgical Treatment For Gastric Ulcer, S.G.O., 124: 1310-1311, June, 1967
3. Wilson, W. J., Templeton, A. W., Turner, A. H. & Lodwick, G. S., Computer Analysis & Diagnosis of Gastric Ulcers, *Radiology* 85: 1064-1073, Dec. 1965
4. Feist, John H. & Littleton, Jesse T., Incidence of Benign Gastric Ulcers on Greater Curvature, *Gastroenterology* 30: 764-771, May, 1956
5. Lloyd, G. A. S., X-ray Manifestations of Early Malignant Gastric Ulceration, *Proc. Ray Soc. Med.*, 49: 274-277, May, 1956



### Decrease in the Concentration of Hemoglobin A<sub>2</sub> During Erythroleukemia

M. Arksoy and S. Erdem (Capa Internal Clinic of Istanbul Medical School, Vakif Guraba Hosp. Istanbul, Turkey) *Nature* 213:522-523 (Feb. 4) 1967

A 63-year-old man had clinical and hematological findings of subacute erythroleukemia with signs of a hemolytic component. Repeated determinations of hemoglobin A<sub>2</sub> with different methods such as starch gel electrophoresis, starch block electrophoresis, and DEAE-cellulose chromatography showed a very low content, between 0.29% and 0.5%. A possible explanation of the decrease of the hemoglobin A<sub>2</sub> fraction in a leukemic patient is that the leukemic state sometimes leads to an imbalance of hemoglobin chain synthesis which results in a relative excess of  $\beta$ -chains or a compensatory production of  $\gamma$ -chains.

### Cytological Diagnosis of Carcinoma of the Prostate

M. K. Mason (Dept. of Pathology, St. James's Hosp., Leeds, Yorkshire, England) *Acta Cytol* (Balt.) 2:68-71 (Feb.) 1967

A total of 356 patients with prostatic symptoms were studied; smears were obtained by prostatic massage. No prostatic epithelium was found in smears obtained from the majority of patients with benign prostatic hyperplasia. The characteristic feature of positive smears is the presence of malignant cells in clumps or casts. In some positive smears, clumps of prostatic epithelial cells which appear morphologically benign may be found with the malignant clumps. Malignancy was found in 34 patients, 145 prostates were benign, and 177 reports were doubtful. A positive smear may be expected in about 70% of patients having prostatic carcinoma. There were no false positive reports.

# Effects of Chloramphenicol on Mammalian Blood Cells\*\*

Orville Neufeld\* and Calvin Hanna\*

Two types of hemopoietic changes occur in man with the use of chloramphenicol. 1) A very rare, usually irreversible type of aplastic anemia which is considered to be a possible hypersensitivity reaction, and 2) a reversible bone marrow change that is related to dosage and length of therapy.<sup>1</sup> The latter is frequented by a common finding of vacuolated bone marrow cells which possess a characteristic "punched out" appearance. Neither of these "toxic" changes have been reported to occur in animals after repeated trials. Our recent study however revealed the presence of vacuolated cells in chloramphenicol treated rabbits. This study was continued and we were able to demonstrate for the first time that mammalian bone marrow cells are affected by therapeutic levels of chloramphenicol in a manner analogous to that of bacteria, i.e., with a decrease in protein synthesis and an increase in RNA synthesis.

## Methods

Rabbits were injected with chloramphenicol (500 mg/kg/day) to produce plasma chloramphenicol levels similar to that obtained clinically in man with 2 to 4 gm/day. The drug was administered for 8 days and the animals allowed to recover for 5 days. At various times bone marrow samples were taken and placed in tissue culture media containing tritiated thymidine, uridine and leucine. The cells were subjected to autoradiographic analysis and the number of exposed silver grains over each cell type tabulated. Also, bone marrow cells from the long bones of rabbits were incubated in tissue culture media with chloramphenicol for 2 or more hours together with tritiated thymidine, uridine and leucine.

## Results

*In vivo studies:* Eight days of chloramphenicol treatment did not significantly alter the hemoglobin, hematocrit or red blood cell count. The white blood cell count dropped slightly, but returned to control values after 5 days of recovery. Average reticulocyte counts increased to 7.8% during therapy and were 14.3% after 5 days of

recovery. The absolute number of each cell type present in the bone marrow are given in Table I.

Cell Types	Day	TABLE I		
		Control	Chloramphenicol	
	0	8	13	
Orthochromatic				
normoblasts		3,470	2,410	3,707
Polychromatic				
normoblasts		1,470	1,861	2,632
Basophilic				
normoblasts		916	1,355	2,161
Erythroblasts		69	56	65
Stems		656	1,241	1,361
Myeloblasts		90	56	109
Promyelocytes		294	340	411
Myelocytes		599	1,305	1,296
Metamyelocytes		972	2,094	2,724
Bands and stabs		2,760	2,444	2,752

Average number of bone marrow cells per milligram of weight of bone marrow of rabbits given chloramphenicol for 8 days and after 5 days of recovery (day 13).

During the chloramphenicol therapy the myeloid and erythroid cells developed a "punched out" appearance, some of the red blood cells contained nuclear inclusions and Howell-Jolly bodies, the polymorphonuclear leukocytes contained fewer segments and the lymphocytes became progressively smaller. On recovery the vacuolated cells rapidly disappeared, but there was an initial marked increase in the number of Howell-Jolly bodies.

The number of silver grains over individual cells gave a measure of DNA, RNA and protein synthesis when incubated with the respective tritiated precursors thymidine, uridine and leucine. The immature cells in the bone marrow were greatly affected by chloramphenicol with time. They reflected a marked decrease in protein synthesis and a concomitant increase in RNA synthesis while the more mature and non-dividing reticulocytes and stabs remained unchanged. DNA synthesis was decreased in the most immature bone marrow cells.

*In vitro studies:* Bone marrow cells were incubated for 2 hours in the presence of various concentrations of chloramphenicol. Protein synthesis was decreased and the RNA synthesis was increased in bacteriostatic concentrations of 3 µg/ml to bacteriocidal concentrations of 300 µg/ml of chloramphenicol. These changes appeared to

\*Department of Pharmacology, University of Arkansas Medical Center, Little Rock.

Paper presented at the University of Arkansas Medical Center in October at the meetings of the Southwest Section of the Society for Experimental Biology and Medicine.

\*\*Research supported by research grants NB-4024 and NB-5076 from the National Institute of Neurological Diseases and Blindness, USPHS, Bethesda, Md.

## EFFECTS OF CHLORAMPHENICOL ON MAMMALIAN BLOOD CELLS

be dose related, *i.e.*, the higher the concentration of the drug, the greater its effect on the cell's metabolism.

### Comment

These findings demonstrate that chloramphenicol effects mammalian blood cells in a way similar to that of bacteria, *i.e.*, increasing RNA synthesis and decreasing protein synthesis. As with bacteria only multiplying cells are affected.<sup>2</sup> The non-multiplying reticulocyte is undergoing a high rate of protein synthesis and is not affected by bacteriostatic levels of chloramphenicol used clinically in man. The effect of chloramphenicol on bacterial cultures is directly proportional to their generation time. This same effect appears to be true in mammalian cells in that the more immatu-

ture and more rapidly dividing cells are more markedly affected over the same incubation time. These results suggest that the slow dividing mammalian cells are as sensitive to chloramphenicol as the fast dividing bacterial cells when one equates its effect with a cell's generation time. Thus, short term therapy with chloramphenicol in man in doses to produce a marked bacteriostatic effect would be less likely to produce noteable bone marrow changes.

### BIBLIOGRAPHY

1. Yunis, A. A. and Bloomberg, G. R.: Chloramphenicol Toxicity: Clinical Features and Pathogenesis. *Prog. Hematology*, 4:138 (1964).
2. Hanna, C. and Neufeld, O.: Studies on the Pharmacology of an Immunosuppressant: Chloramphenicol. *Survey Ophthal.*, 11:454 (1966).



### Tumorlet of Bronchus

H. E. MacMahon (19 Hubbard Park Rd., Cambridge, Mass.), J. Werch, and K. Sorger *Arch Path* 83:359-363 (April) 1967

A tumorlet of the bronchus, a microscopic carcinoma-like lesion composed of small, uniform, but atypical bronchial epithelial cells, usually associated with inflammatory scar tissue, was first seen in a diagnostic bronchial biopsy specimen. Twelve years later, and without any therapy, the tumorlet, grossly unrecognizable was still present and confined to the area of scarring from which the original biopsy had been taken. Such a long course attests to the suspected biologically benign character of this lesion, which may be so easily mistaken histologically for a carcinoma of the bronchus.

### Critical Evaluation of the Calcium Balance

#### Technique: II. Dermal Calcium Losses

B. Isaksson (Sahlgren's Hosp., Goteborg, Sweden)  
B. Lindholm, and B. Sjogren *Metabolism* 16: 303-313 (April) 1967

A method of determining dermal calcium losses involves collection of arm sweat in a plastic bag, rinsing with deionized water, determination of the Ca/K ratio in the diluted sweat, and determination of dermal potassium losses. The latter losses are determined on the basis of the potassium balance and simultaneous determinations of changes in total exchangeable potassium. Arm sweat seems to be presentative for whole body sweat with respect to the Ca/K ratio. The dermal calcium loss varied between 20 and 365 mg in 13 patients (mean 120 mg/day).

# Anti-Inflammatory Actions of Indomethacin in the Eye

Calvin Hanna\*

**T**opical hydrocortisone and related steroids are used in the treatment of excessive tissue inflammatory reaction to trauma, allergens and certain infections of the eye. These steroids are effective and rapid acting, however, their use tends to increase the incidence and severity of infections caused by bacteria, fungi and viruses.<sup>1</sup> An advance in the therapy of ocular inflammation would be the introduction of a potent anti-inflammatory drug that did not potentiate corneal infections, especially due to, herpes simplex virus. A high percentage of corneal blindness can be attributed to the use of topical steroids which increase the severity of this virus infection.

The nonsteroid anti-inflammatory agents, such as, aspirin and phenylbutazone are not potent enough for the treatment of ocular inflammation. Indomethacin (Indocin) is a new nonsteroid anti-inflammatory drug used orally in the treatment of rheumatic conditions. The anti-inflammatory activity of the potent drug was tested topically in the eyes of rabbits infected with herpes simplex virus as well as in eyes inflamed by intracameral bovine serum.

## Methods

Adult rabbits were sensitized by five intravenous injections of normal bovine serum over a nine day period. To determine hypersensitivity, a week later each rabbit was challenged with intracutaneous bovine serum to test for enduration and flare reactions. A week later 0.1 ml of a 1:10 dilution of bovine serum was injected into the

cloudiness and exudate in the anterior chamber, and hyperemia and thickening of the iris. The degree of each change was graded using an arbitrary system of 0 to a maximum of 3. Following the intracameral bovine serum various concentrations of hydrocortisone acetate in 0.5% methylcellulose, indomethacin in 0.5% hydroxyethylcellulose or water were dropped onto the cornea hourly, or the rabbits were injected with one of the drugs in a single dose of 10 mg/kg.

Viral keratitis was produced in rabbit corneas using the RE or the PH strains of herpes simplex virus.<sup>2</sup> The virus infected eyes were treated every 2 hours for 4 days with 0.1% idoxuridine (IDU) or water and each rabbit was injected intramuscularly daily with 10 mg/kg of hydrocortisone acetate or indomethacin for 6 days. Groups of rabbits were given a nonpenetrating corneal wound followed by drops of 1% indomethacin or 2½% hydrocortisone acetate 4 times a day for 6 days.

## Results

Intramuscular hydrocortisone acetate or indomethacin significantly reduced the degree of ocular inflammation elicited by intracameral bovine serum starting at 4 hours. Similar results were obtained using topical 2½% and 1¼% hydrocortisone acetate or 1% and ½% indomethacin (Table I).

The course of the herpes simplex virus infection of the rabbit cornea was worsened by intramuscular injections of hydrocortisone acetate but not by indomethacin. Idoxuridine drops applied to the herpes simplex virus infected cornea did not develop typical dendritic ulcerations in either water, indomethacin or hydrocortisone acetate injected rabbits.

Indomethacin or hydrocortisone acetate drops to the wounded rabbit eyes did not hinder the healing of the non-penetrating corneal wound.

## Comments

Hydrocortisone and related steroids when used systemically in large doses produce many profound side effects including possible lens cataract production. The corticosteroids may be used topically to reduce the possibility of systemic effects, however, topical steroids may increase intraocular tension especially in patients with glaucoma.<sup>3</sup>

Large doses of indomethacin when used orally

TABLE I

Agent	Hours				
	4	8	12	20	28
Water	40	50	55	57	60
Hydrocortisone	22	35	30	28	26
Indomethacin	20	23	21	20	18

Influence of indomethacin (½%) and hydrocortisone acetate (1¼%) ophthalmic drops on bovine serum induced ocular inflammation in the rabbit.

Per cent of Maximal Response

anterior chamber. Under double blind conditions each eye was observed hourly for the amount of chemosis and hyperemia of the conjunctiva,

\*Department of Pharmacology, University of Arkansas Medical Center, Little Rock, Arkansas.

Paper presented at the University of Arkansas Medical Center in October at the meeting of the Southwest Section of the Society for Experimental Biology and Medicine.

## ANTI-INFLAMMATORY ACTIONS OF INDOMETHACIN IN THE EYE

in the treatment of rheumatic conditions leads to a high incidence of side effects including headache and gastrointestinal upset. Topical indomethacin is a very potent agent in the treatment of ocular inflammation in the rabbit eye, and it does not appear to alter the course of the herpes simplex virus infection of the cornea or alter corneal wound healing. Clinical trials will soon start to determine the effectiveness of topical indometha-

cin for the treatment of ocular inflammation in man.

### BIBLIOGRAPHY

1. Simkin, B.: Corticosteroids in Clinical Practice. *Eye, Ear, Nose, & Throat Monthly*, 43(3):47-54, 1964.
2. Hanna, C. and Wilkinson, K. P.: Effect of Idoxuridine on the Uptake of Tritium-Labeled Thymidine in the Rabbit Infected with Herpes Simplex. *Exp. Eye Re.*, 4:31-35, 1965.
3. Armaly, M. F.: Dexamethazone Ocular Hypertension in the Clinically Normal Eye. *Arch. Ophthal.*, 75:776-782, 1966.



### Fibrinogen From Human Plasma: Preparation by Precipitation With Heavy-Metal Coordination Complex

M. E. Brown and F. Rothstein (Tufts Medical School, Boston) *Science* 155:1017-1019 (Feb. 24) 1967

Potassium tetrathiocyanato-(S) mercurate II is used in a rapid procedure for the isolation of human fibrinogen from fresh plasma. The final product, almost all of which is coagulable by thrombin, represents an average yield of 80% and is stable in solution. It is free of plasmin, streptokinase-activatable plasminogen, and coagulation factors II, V, VIII, X, and XIII. Sedimentation analysis reveals a single peak with a sedimentation coefficient equal to 7.0 S at infinite dilution. Immunodiffusion on cellulose acetate results in two precipitin lines with rabbit anti-serum to whole human serum.

### "Disappearance" of Cystinuria in Patient Treated With Prolonged Low Methionine Diet

F. O. Kolb, J. M. Earll, and H. A. Harper (Univ. of California Medical Center, San Francisco) *Metabolism* 16:378-381 (April) 1967

A unique patient, in whom the use of a rigorously controlled, low-methionine diet for ten years has been associated with disappearance of his cystinuria, is reported. Ornithine, lysine, and arginine continue to appear in the urine in large amounts, and renal function remains excellent. Oral loading with methionine promptly resulted in reappearance of large amounts of cystine. Possible explanations for improvement of cystinuria while on a prolonged low-methionine diet have been offered. This case confirms the effectiveness of a low-methionine diet in selected adult patients and demonstrates that it is a safe long-term therapy for adults.

## WHAT IS YOUR DIAGNOSIS?

Prepared by the  
Department of Radiology, University of Arkansas  
School of Medicine, Little Rock

ANSWER ON PAGE 192



**HISTORY:** This 53 year old man was seen on referral because of the presence of a vague epigastric mass on routine physical examination.

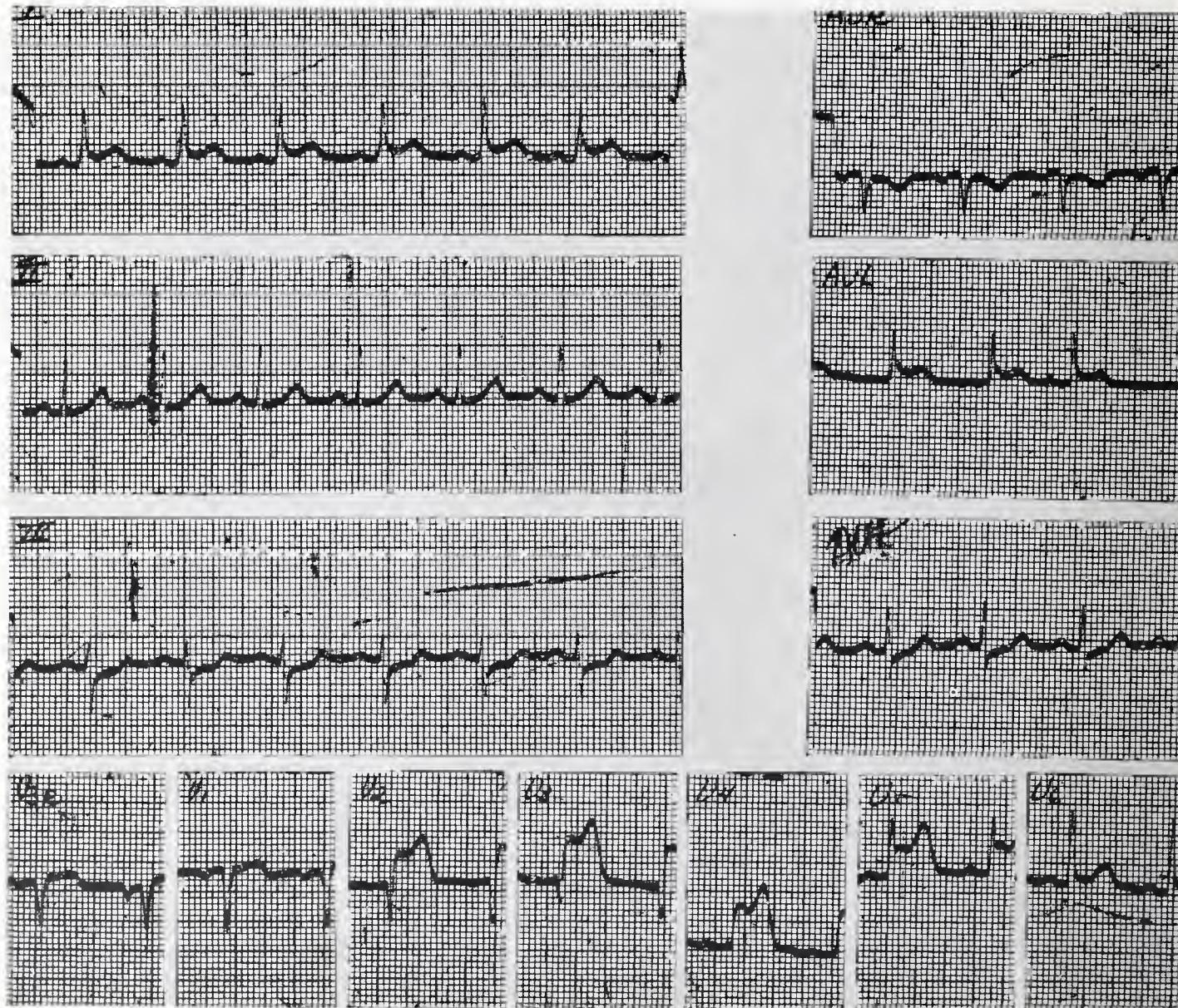


## **ELECTROCARDIOGRAM**

## OF THE MONTH

AGE: 54 SEX: F BUILD: Stocky BLOOD PRESSURE: 160/100  
CARDIAC DIAGNOSIS: (?) Myocardial Infarction  
OTHER DIAGNOSES: None  
MEDICATION: None  
HISTORY: Chest pain 3 hours duration. (Patient died.)

ANSWER ON PAGE 192



The Department of Medicine, University of Arkansas Medical Center  
James S. Taylor, M.D., Professor of Medicine

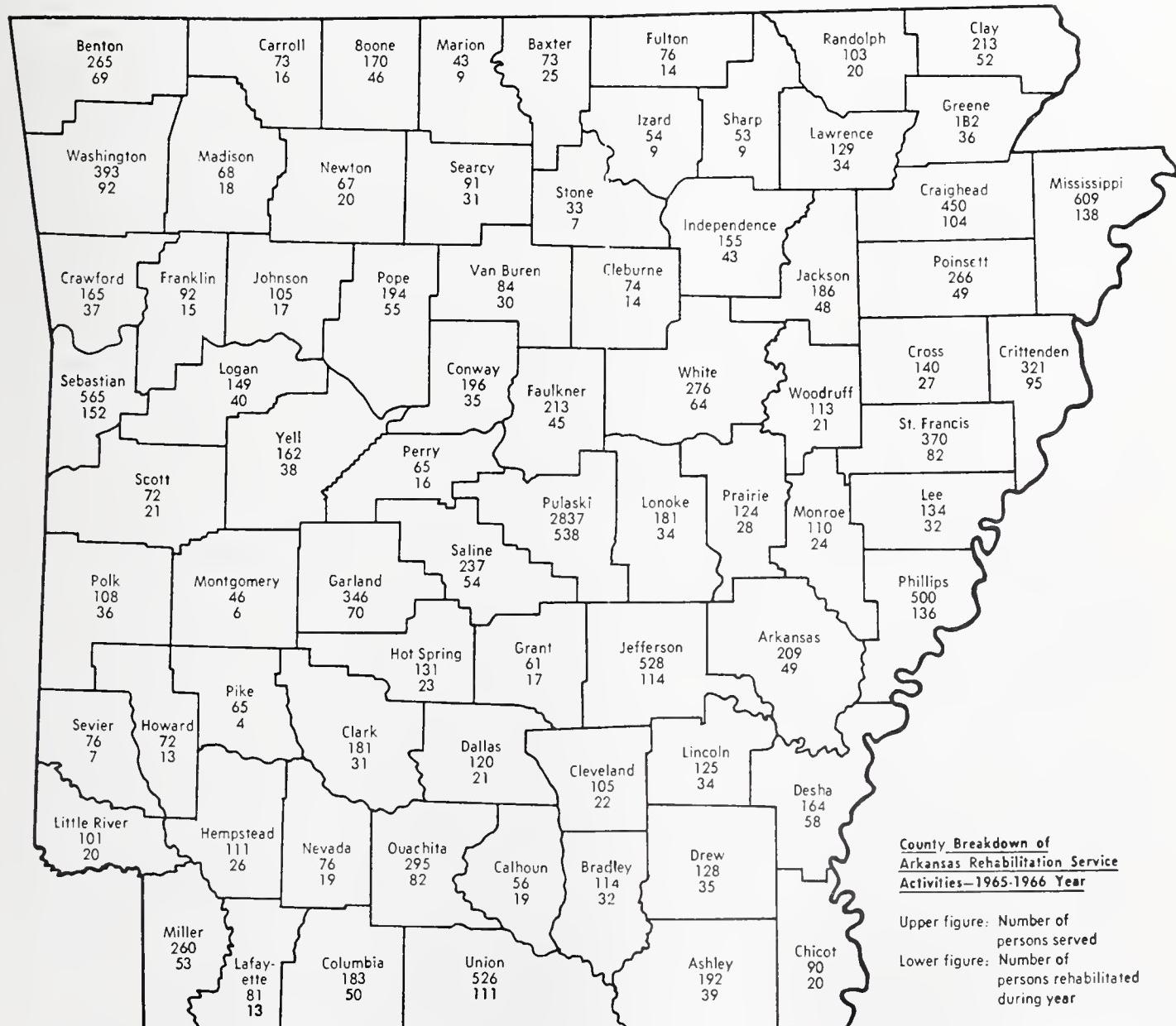


## PUBLIC HEALTH AT A GLANCE

### REHABILITATION

Physical and mental health are well-known to be dependent upon each other, but when the obvious facets underlying these two characteristics such as preventive medicine, surgery, and psychiatry are brought into focus, we tend to lose sight of other facets contributing to the general well-

being of the individual with ramifications into the family, community, city, county, state federal, and world welfare. Although the individual's desire to be self sustaining and contributing to the "total gross national product" must be the foremost factor in rehabilitation, there must be un-

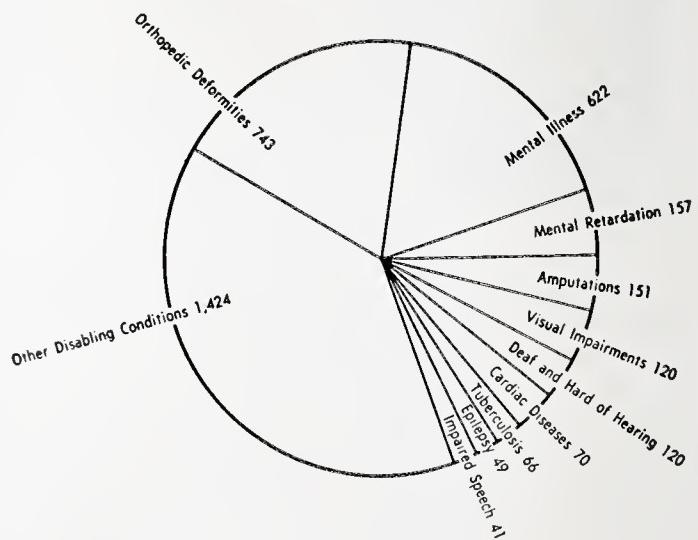


questioned encouragement and acceptability by his family and community. A delicate balance exists and should be recognized by all involved in order to tip the scales in the proper direction and to avoid adverse reaction if at all possible. Historically, the family made adjustments for the limitations of any physically or mentally handicapped individuals; when they were incapable of full utilization of the remaining talents, religious or fraternal organizations gave assistance of varying type and degree. In contrast to the acceptance of social dependence on welfare, these organizations actually extended and enlarged the training of individuals for some limited occupational and social activities. Major steps in rehabilitation of handicapped persons through the years were the development of glasses, hearing aids, orthopedic devices, etc., as well as the perfection of more advance physical therapy and finally the adaptation of our educational systems to train these individuals in their profession or vocation.

In Arkansas, the responsibility for rehabilitation training *per se* of those unable to attend regular schools is administratively placed in the Executive Branch of the State under the Department of Education as the Arkansas Rehabilitation Service with a separate board, known as the State Board for Vocational Education.

Most physicians are aware of the training services available as reflected by the fact that more rehabilitants are referred by physicians than by any other source; for the latest available breakdown of such data the 1965-66 Annual Report of the Arkansas Rehabilitation Service gives 1,155 or 32% of the total of all sources of referrals from

### Disability Breakdown of Those Rehabilitated



physicians directly, with no telling how many were influenced indirectly by some physician's understanding of the rehabilitant's situation. On the other hand, 3,198 of the rehabilitants had diagnostic services at a cost of \$76,876 to the Arkansas Rehabilitation Service, of this number 1,609 rehabilitants received surgery, and treatment at a cost of \$279,522 in addition to hospitalization or convalescent care for 1,430 at a cost of \$337,631. An additional \$69,224 was spent for prosthetic appliances for 436 of these individuals. Other costs were itemized under training and training materials; maintenance and transportation; tools, equipment and licenses; operation of rehabilitation or adjustment centers; and operation of workshops for another \$1,154,793 making a grand total of \$1,918,046 in cost of case services. Economically this was a very good investment, justifying the slogan "Rehabilitation Pays", it is notable that the before and after total incomes for the 3,563 rehabilitants rose from \$750,000 to \$6,500,000. Thus the economy of the State was benefitted to say nothing of the pride re-established for those who now have more self-respect as well as a feeling of security and independence associated with earning their own living to say nothing of their ability to help support their family and contribute to the financing of the various governmental structures rather than being a ward of the governmental structure.

Of special interest to physicians is the Arkansas Rehabilitation Research and Training Center established in March of 1965 which is housed in the former Army and Navy Hospital building at Hot Springs along with the Hot Springs Rehabilitation Center. The Rehabilitation and Train-

### Work Status of 3,563 Rehabilitants

Before Rehabilitation	After Rehabilitation
640      Wage or Salaried Worker Competitive Labor Market	2,526
7      Sheltered Workshop Employee	49
78      Self-Employed	203
449      Homemakers and Unpaid Family Workers	785
346      Unemployed Students	
2,043      Unemployed for other Reasons	

ing Center is a joint project with a training staff at the Hot Springs Facility and research staff at the University of Arkansas.

The training program provided at the Hot Springs Rehabilitation Center since 1965 is utilized by persons from all 75 counties in Arkansas as well as by some out-of-state referrals. Rehabilitation Center for the Mentally Ill was established in 1958 and is presently located at the State Hospital with housing for 30 men and 30 women. 51 of 378 new clients were placed in advanced training and 328 were placed in jobs. The Arkansas Rehabilitation Services at the Benton Unit of the State Hospital placed 45 of 229 referrals during 1965-66 directly on jobs and another 65 in advanced training. The Benton Unit of the State Hospital also has one building that is the facility accommodating 80 beds for short term rehabilitation of alcoholics. The Program for Alcoholics functioned at near capacity level during the fiscal year 1965-66 handling 1,291 referrals. The Children's Colony Facility at Conway has space for 20 girls and 20 boys and during 1965-66 served 143 mentally retarded with a definite vocational objective recommended for 59 of the children. Until recently Rehabilitation Facilities were located in our four State Training Schools at Pine

Bluff, Wrightsville, Alexander and Fargo. These combined placed 61 on jobs, also they placed 49 in advanced training or in on-the-job training situations and 41 returned home to continue education. Services offered at the Audiology and Speech Center (located on the grounds of the Arkansas School for the Deaf) are of two types, diagnostic and therapeutic. Services for the Tuberculosis are available at the State Sanatorium near Booneville and were located at McRae Memorial Sanatorium near Booneville and were located at McRae Memorial Sanatorium until it was closed recently by Legislative action. The former reported 46 patients returned home upon discharge to the area field rehabilitation counselor for further services while the latter placed 39 of 56 referred cases on jobs and the remaining 17 were transferred for additional training.

The Rehabilitation Program for Arkansas is developing at a rapid pace through the participation of many individuals concerned with present and future needs. These services, as planning progresses, will reach into every community and provide the far reaching assistance necessary to help rehabilitate the disabled individual to become self-supporting and self-reliant.



#### **Renal Tumor**

H. E. Carstensen and H. G. Iversen (Bispebjerg Hosp., Copenhagen) *Nord Med* 77:243-248 (Feb. 23) 1967

Renal tumor was suspected in 63 patients examined for other causes. In 26 of 46 patients admitted for renal tumor, this diagnosis proved incorrect. The patient had been admitted with an other diagnosis in 17 cases of hypernephroma. Only 13 of 36 tumors in a series were detected by conventional intravenous urography. Urography combined with tomography was of much greater diagnostic importance. Aortography, indicated only in a few selected cases, gave an incorrect diagnosis in many instances. Exploratory lumbotomy is often preferable to aortography and can hardly be said to involve greater risks than the latter procedure.

#### **Critical Evaluation of the Calcium Balance Technique: III. Theoretical Phosphorus Balance**

B. Isaksson (Salihgren's Hosp., Goteborg, Sweden) and L. Ohlsson *Metabolism* 16:314-318 (April) 1967

Theoretical and observed phosphorus balances in metabolic balance studies were compared before and after correction for dermal losses of calcium and nitrogen. When no correction for dermal losses was made, the theoretical phosphorus balance had an average of 125 mg more phosphorus than the observed balance in 15 of 18 studies. When dermal losses of calcium and nitrogen were considered, the theoretical phosphorus balance was corrected to a value which was in good agreement with the observed phosphorus balance in seven of eight studies.



## EDITORIAL

# Shock — A Newer Approach

Alfred Kahn, Jr., M.D.

**A**t the 22nd Annual Meeting of the Central Surgical Society, J. N. Wilson presented a paper on shock which is published in Archives of Surgery, Volume 91, page 2, July, 1965. This paper is comprehensive and suggests a "rational approach"; the paper summarizes some of the work of others and injects his own ideas from a study of 52 patients.

Not so very long ago medical students were taught that shock had a rather unified picture with regard to the hemodynamics, regardless of the cause. Investigators have clearly shown that shock does not present a constant hemodynamic pattern and furthermore the etiologic cause of the shock, a rather convenient therapeutic crutch, may not be apparent so that it can be used as a guide line to therapy. In light of this, Wilson urges that each shock case be investigated hemodynamically so that therapy can be tailored to the case.

The author recommends that two procedures be carried out on each case of shock: (1) Central venous pressure measurement by inserting a catheter into the subclavian vein just below the mid clavicular and pushing it 5" into the central venous system; a water manometer or plastic tube can be used for measurements of the pressure. (2) Light reflection oximetry. Using the information obtained from the measurements of central venous pressure and oximetry, shock can be divided into three general types:

- A. Hypovolemic which is characterized by a decreased cardiac output and a low central venous pressure even after it is challenged by a 5% increase in the patients estimated normal blood volume produced in a 5-10 minute period by blood or plasma. The treatment here is restoration of the circulatory blood volumes.
- B. Cardiac insufficiency which is characterized

by a decreased cardiac output with an initial high central venous pressure or a central venous pressure which becomes rapidly elevated after a challenge with blood or plasma. Treatment for this type of shock is to improve the heart's pumping action.

- C. Deficient vascular tone shock is characterized by a normal cardiac output but within inadequate tone in the peripheral vessels to maintain the circulation. The central venous pressure is normal. Increasing the blood volume does not elevate the central venous pressure nor does it improve the shock. The treatment here is to restore vascular tone.

The author studied the use of simultaneous measurements of the arteriovenous oxygen difference and the dye dilution method of cardiac output. He found that in his series A-V oxygen difference grew greater with a failing cardiac output and the A-V difference grew smaller as the cardiac output rose. Thus using a simple oximeter determination on a small sample of arterial and venous blood, a quick clinical check could be made of the relative cardiac output without having to use the more difficult dye dilution technique; in other words, using this A-V oxygen difference in combination with central venous pressure, the clinician can diagnose and monitor the shock case; these techniques are not so to speak completely "fail-safe" but they offer important guidelines when taken in conjunction with the patient's total clinical picture.

Wilson used various catecholamine agents in the treatment of shock and found that they all worked provided there was a need for them; they included "Isuprel," "Adrenalin," "Aramine," "Levophed," and "Hypertensin." Adrenal Steroids had a beneficial effect in some cases.

This is a provocative article and deserves critical reading by practicing physicians.

# MEDICINE IN THE



## FULL-TIME FACULTY IN 78 U.S. MEDICAL SCHOOLS

In academic year 1965-66 a total of 16,746 full-time faculty members at the rank of instructor and above were employed in staffing 1,464 departments or sections at 78 U.S. medical schools, an average of over 200 full-time faculty members per school. Of the total faculty reported, 10,113 were serving in 708 clinical departments, 823 were serving in 164 sections or divisions of clinical departments, 5,041 were serving in 487 basic science departments, and the remaining 769 were serving in either supporting departments, administrative units or in unidentified departments. The majority of faculty members, 58.1 per cent, were reported as having M.D. degrees, 23.3 per cent Ph.D. degrees, 4.7 per cent both M.D. and Ph.D. degrees, less than one per cent held other doctoral degrees, 5.7 per cent held less than doctoral degrees and 7.5 per cent did not specify their educational at-

tainments. The faculty group that has not reported educational data is randomly distributed throughout medical school departments and is most probably not significantly different in the level of educational attainment than the total faculty.

Table 1 presents a distribution of the number of basic science departments reported, full-time faculty, average per department, and the number of faculty by degree of educational attainment. The averages presented in this table range from 3.9 faculty members in departments of biostatistics to 15.9 in departments of pathology, with nine the average strength in the other five classical preclinical departments. The educational background reported for full-time faculty members in the basic sciences indicates that 69.1 per cent of all the Ph.D.'s, 15.5 per cent of all the M.D.'s and 44.9 per cent of those having both M.D.'s and Ph.D.'s are serving in basic science departments.

TABLE I  
FULL-TIME STAFFING AT THE RANK OF INSTRUCTOR AND ABOVE IN  
BASIC SCIENCE DEPARTMENTS OF 78 MEDICAL SCHOOLS, 1965-1966

Department	Depts. Reporting	Full-time Faculty by Dept.			Degree of Educational Attainment				Non-Doct. or No Resp.
		Total	Average	Ph.D.	M.D.	M.D. & Ph.D.	Other Doct.		
Anatomy	77	780	10.1	526	107	56	8	83	
Biochemistry	76	838	11.0	682	50	46	4	56	
Microbiology	78	630	8.1	438	108	28	9	47	
Pharmacology	71	561	7.9	327	130	66	3	35	
Physiology*	78	777	10.0	478	162	73	8	56	
Genetics	6	34	5.7	25	5	4	—	—	
Biophysics	8	60	7.5	38	6	5	—	11	
Biostatistics	7	27	3.9	16	3	—	—	8	
Pathology	77	1,228	15.9	123	912	63	14	116	
Other Basic Sci.	9	106	11.8	50	25	11	2	18	
Total	487	5,041	10.3	2,703	1,508	352	48	430	

\*Includes 9 Depts. of Physiology and Biophysics, 7 Depts. of Physiology and Pharmacology having essentially identical staffing characteristics.

**TABLE 2**  
**FULL-TIME STAFFING AT THE RANK OF INSTRUCTOR AND ABOVE IN**  
**CLINICAL DEPARTMENTS OF 78 MEDICAL SCHOOLS, 1965-1966**  
**(Excluding Sections or Divisions of Clinical Departments)**

Department	Full-time Faculty by Dept.			Degree of Educational Attainment				Non-Doct. or No Resp.
	Depts. Reporting	Total	Average	Ph.D.	M.D.	M.D. & Ph.D.	Other Doct.	
Medicine	74	2,653	35.9	92	2,245	122	4	190
Surgery	72	1,250	17.4	64	977	70	4	135
Anesthesiology	39	325	8.3	2	297	9	1	16
Dermatology	20	90	4.5	17	61	4	2	6
Neurology	28	240	8.6	34	174	14	—	18
Obstetrics-								
Gynecology	74	561	7.6	43	466	22	2	28
Ophthalmology	37	169	4.6	32	106	8	2	21
Orthopedic								
Surgery	17	58	3.4	3	42	6	—	7
Otolaryngology	23	145	6.3	40	50	3	1	51
Pediatrics	74	1,191	16.1	76	970	34	3	108
Phys. Medicine &								
Rehabilitation	35	266	7.6	30	136	8	1	91
Psychiatry	62	1,443	23.3	365	803	32	14	229
Psychiatry &								
Neurology	19	294	15.5	53	164	9	—	68
Prev. Medicine								
& Pub. Health	58	562	9.7	111	234	23	15	179
Radiology	69	821	11.9	87	596	28	2	108
Other	7	45	6.4	14	16	4	—	11
Total	708	10,113	14.3	1,063	7,337	396	51	1,266

Table 2 presents for clinical departments the number of departments, the number of faculty, average per department, and educational attainment. Average departmental staffing ranges from 3.4 faculty members in departments of orthopedic surgery to 35.9 faculty members in departments of medicine. Clinical departments and sections report utilization of 27.8 per cent of the Ph.D.'s, 82.9 per cent of the M.D.'s and 53.2 per cent of those having both M.D.'s and Ph.D.'s.

In addition to the full-time faculty reported by clinical departments in Table 2, 164 sections or divisions of clinical departments reported a total of 823 full-time faculty members. As opposed to departments, sections of dermatology, neurology, ophthalmology, orthopedics and otolaryngology reported average staffs of more than two but of less than three faculty members per section. As a generalization, sections have fewer full-time faculty members than do the same specialty areas enjoying departmental status.

### ANSWER—What's Your Diagnosis?

**DIAGNOSIS:** Aneurysm of the abdominal aorta.

**X-RAY FINDINGS:** There is a fusiform mass, outlined by calcium, projected over the spine extending to both the right and left. It extends from the lower border of the second lumbar vertebra to the sacrum. The aneurysm was resected and the aorta reconstructed with a Dacron graft.

### ANSWER—Electrocardiogram of the Month

**RATE:** 90    **RHYTHM:** Sinus  
**PR:** .17    **QRS:** .07    **QT:** .36

**SIGNIFICANT ABNORMALITIES:** Significant Q waves V<sub>2</sub>, V<sub>3</sub>. Abnormal S-T elevation in I, V<sub>2</sub>-V<sub>6</sub> and aVL with reciprocal depression in III and aVF.

**INTERPRETATION:** Abnormal Acute transmural myocardial infarction, anterior wall.

**COMMENT:** The presence of marked injury current (ST elevation) is frequently associated with poor prognosis, although may be found if tracing is recorded very soon after onset of infarction.

**THE MONTH IN WASHINGTON**

Washington, D.C.—The House Ways and Means Committee approved a social security bill including some medicare and medicaid changes sought by the medical profession and excluding others opposed by the American Medical Association.

The committee also discarded an Administration proposal to extend medicare coverage to disabled workers under age 65, as well as an Administration-opposed proposal that would have put federal government workers under medicare. The actions were part of a general scaling down of the increases in social security benefits sought by President Johnson.

A committee bill (H. R. 12080) included these changes in the present law:

—Allow medicare patients, or doctors, to collect from the government on the basis of an itemized bill. Present law requires a bill received as having been paid to the doctor if the doctor doesn't accept an assignment. (AMA-supported)

—Authorize states to allow physicians to bill medicaid patients directly if they are not also cash assistance recipients. (AMA-supported)

—Eliminate the requirement for certification by a doctor before admission of a medicare patient to a hospital. (AMA-supported)

—Shift coverage on medicare outpatient diagnostic services provided by hospitals from Plan A to Plan B. (AMA-supported)

—Put limits on federal contributions to states for medicaid programs. Beginning July 1, 1968, the federal ceiling on eligibility would be 150 per cent of the annual income set by a state for welfare eligibility. It would drop to 140 per cent on January 1, 1969, and to 133½ per cent January 1, 1970.

—Require states to give birth control information to welfare patients who request it.

In addition to opposing extension of medicare to disabled workers under age 65, the AMA opposed creation of a new Plan C under medicare and a provision for chiropractor's services—both of which were rejected by the committee.

The House group slashed back the President's proposal for a 15 per cent minimum monthly social security increase in cash benefits to 12.5 per cent. The administration proposal for an increase in social security taxes also was scaled down to 4.4 per cent, on the employer and on the employee, of the first \$7,600 in wages starting in 1968. The

taxable wage base now is \$6,600, and the tax rate is 4.4 per cent. The Administration had asked that the base be increased to \$7,800 next year, and in later stages, to \$10,800.

\* \* \* \*

The American Medical Association and the Kansas City (Mo.) Community Blood Bank asked Congress to exempt community blood banks from the anti-trust laws.

Representatives of the groups testified at a Senate judiciary subcommittee hearing in support of S. 1945 which would amend the anti-trust laws to provide that a nonprofit blood or tissue bank, or hospital, or physician who refuses or who joins together with others in refusing to obtain or to accept delivery of blood, blood plasma, other tissue or organs from any other blood or tissue bank would not be in restraint of trade. The interstate shipment of blood, blood plasma, other tissue or organs also would not be deemed to constitute trade or commerce in commodities.

The legislation was introduced after the Federal Trade Commission ruled that a group of Kansas City pathologists, hospitals and blood bank officials had combined illegally to restrain commerce in human whole blood. An appeal against the ruling is pending in the Federal Eighth Circuit Court of Appeals in St. Louis, Missouri.

Dr. Robert S. Mosser, President of the Kansas City Blood Bank, said it was inconceivable that groups of physicians may not have the right to discuss shortcomings of medical practice, including the use of blood and its derivatives.

Dr. Frank C. Coleman, Tampa, Florida, pathologist, presented the views of the AMA:

"Because serious health hazards may arise through transfusion by virtue of the medical condition of the donor, the care necessary in the selection of blood donors by blood banking facilities cannot be over-emphasized. Serious consequences may arise unless the blood is properly drawn, processed, stored, and distributed. And it is imperative that these procedures be performed under high standards, under the guidance and control of proper medical supervision."

Dr. Coleman pointed out that the AMA in 1963 adopted a statement "to the effect that the transfusion of blood constitutes the transplant of human tissue, and that physicians responsible for transfusions render a medical service to the patient."

"The House of Delegates stated that the selec-

tion of the donor, the drawing of the blood, its processing and storage, the delivery, the typing and crossmatching, and the administration of the transfusion and the evaluation of its effects, were functions intimately involving medical judgment and requiring medical supervision," Dr. Coleman said.

"The American Medical Association believes that the health interests of the community are best served when the supply of blood is maintained on a replacement basis. We feel that the patient, the donor, and the public benefit when blood is replaced by the patient, his family, or his friends in the various organizations of which he is a member."

"Since the consequences of any abuses can be tragic, it is our opinion that the physician and hospital must have available to them every means of insuring the safety of the patient."

\* \* \* \* \*

The American Medical Association and the Missouri State Medical Association argued against an Internal Revenue Service proposal to tax the advertising revenues of publications of non-profit associations.

Representatives of other affected, non-medical organizations also opposed the proposed tax at an IRS hearing.

Bernard D. Hirsh, director of the AMA's Law Division, pointed out that the pertinent law on unrelated income had been on the books for 17 years without any such tax being proposed by the government.

"The proposed regulations go beyond the law, first in arbitrarily classifying all advertising contained in trade and professional journals as unrelated, and secondly, in treating income derived from this source as if it were income from a business capable of separate existence," Hirsh said.

Dr. Hector W. Benoit, Jr., MSMA President, noted that one of the states purposes of the proposal was to eliminate alleged unfair competition in advertising between non-profit association journals and profit magazines.

"If you have the stomach to read many of these advertisements (in Missouri Medicine), you will find they are directed purely to a professional audience and would be unlikely to enhance the public appeal to such lay publications as Atlantic

Monthly, Look, etc. . . ." Dr. Benoit said.

He also noted that medical societies furnish many voluntary services for their communities, as well as provide physicians with much of their latest information on medical advances.

"Without the help of the advertising income from these publications and the income of exhibitors at these medical meetings, many of these sources of educational information would be severely restricted, even indeed in many instances, eliminated entirely," he said.

\* \* \* \* \*

The Public Health Service reported that, according to Hill-Burton state agencies, 3,327 of the nation's 6,716 general hospitals need modernization or replacement of facilities for 272,000 of their beds. Of the total, replacements is required for 70,000.

But Dr. William Stewart, PHS Surgeon General, said that replacement or modernization was not the complete answer.

"Development of alternative care facilities, earlier preventive treatment, increased and more readily available outpatient services—all of these may offer a better solution to a given hospital's problems," he said.

Dr. Stewart said 143 hospitals in the survey were critically overcrowded with average annual occupancy rates of 90 per cent or more of reasonable capacity. Another 1,289 hospitals had occupancy rates of between 80 and 90 per cent, "substantially above the national average."

"Any hospital experiencing an average annual occupancy rate of 90 per cent or more exceeds the safe limit," he said.



#### Tennessee Medical Assembly

The Tennessee Valley Medical Assembly will be held at the Memorial Auditorium, Chattanooga, Tennessee, October 2-3, 1967. David P. McCallie, M.D., is chairman. His address is 107 Interstate Building, Chattanooga.

**CORRECTION**

The June 1967 issue of The Journal of the Arkansas Medical Society, on page 32, listed Dr. Philip ReMine as being approved for affiliate membership on the basis of retirement. This was in error and should have indicated that Dr. ReMine is an affiliate member because of disability.

An intensive program on *Current Concepts in Cardiology*, with special emphasis on coronary disease, indication and management of valvular replacement, diagnosis and management of cardiac arrhythmias, vector-cardiography and applied cardiovascular physiology. This program is being offered by the Institute for Cardiovascular Diseases at Good Samaritan Hospital, 1033 East McDowell Road, Phoenix, Arizona 85002 on January 10, 11 and 12, 1968. The meetings will be held at Del Webb's Towne House in Phoenix, Arizona. The program director is Alberto Ben-

chimol, M.D. with guest faculty: William M. Chardack, M.D., E. Grey Diamond, M.D., Darrell D. Fanestil, M.D., Dean Franklin, George C. Griffith, M.D., Paul Hugenholtz, M.D., Albert Kattus, M.D., C. Walton Lillehei, M.D., Oscar Magidson, M.D., Alfred Pick, M.D., and Robert L. Van Citters, M.D. This is an official Postgraduate Course of the American College of Cardiology. For information about this program, write to Mr. William B. Nelligan, Executive Director for the American College of Cardiology, 9650 Rockville Pike, Washington, D.C. 20015.

**Basic Psychiatric Seminars**

Beginning in September we are again offering, at the University of Arkansas Medical Center, two small-group, subject-oriented seminars which will be limited to ten participants each. These informal seminars will meet once a week for two hours on alternate weeks for approximately six months, or a total of twelve sessions. Topics for discussion will be presented by means of lectures, live case presentations, discussion of your problem cases relative to the topic, and audio-visual aids when applicable.

**PERSONAL AND NEWS ITEMS****Dr. Finch In Paragould**

Dr. Robert M. Finch is now affiliated with Dr. Jacob Williams of Paragould for the general practice of medicine. Dr. Finch is a 1964 graduate of the University of Arkansas Medical Center.

**New Officers**

New officers of the Arkansas Medical, Dental and Pharmaceutical Association are: Dr. Frank Bryant of Pine Bluff, president; Dr. Robert Smith of Pine Bluff, vice president; Dr. C. A. Lawlah of Pine Bluff, treasurer; Dr. T. J. Collier of Hot Springs, executive secretary; Dr. Worthie R. Springer of North Little Rock, president-elect.

**Walnut Ridge Has Two New Doctors**

Dr. Larry Lawson has joined Dr. Ralph Joseph for the practice of medicine at Walnut Ridge. Dr.

Joe E. Hughes has also joined Dr. James H. Hickman in the practice of medicine at Walnut Ridge.

**Dr. Brown Has Associate**

Dr. A. R. Brown of Searcy, has announced the association of Dr. H. C. Palmer, Jr., in the practice of general medicine. Dr. Palmer is a graduate of the University of Kansas Medical School.

**Fifty Year Club Meets**

Dr. J. H. McCurry of Cash has been elected secretary emeritus of the Fifty Year Club of American Medicine. The election was held during the AMA annual meeting in Atlantic City in June. Dr. Davis W. Goldstein of Fort Smith was a speaker at the club's luncheon meeting.

**Doctors Announce Association**

Doctors J. Clyde Hart, James T. Rhyne and

## PERSONALS AND NEWS ITEMS

Thomas E. Townsend of Pine Bluff announce the association of Dr. Francis M. Henderson for the practice of pediatrics. Dr. Henderson formerly practiced at Stuttgart.

### **Dr. Purcell Enters Residency**

Dr. Donald I. Purcell of Paragould has begun training in internal medicine at the University of Arkansas Medical Center in Little Rock.

### **New Doctor at Tuckerman**

Dr. L. Oneal Sutter, a native of Pleasant Plains, Arkansas, has established a general practice in Tuckerman.

### **Children's Colony Staff Addition**

Dr. Milton C. Bessiere of Madison, Wisconsin, has joined the staff of the Arkansas Children's Colony in Conway.

### **Dr. Tilley Named to AAGP**

Dr. Lewis B. Tilley of Arkadelphia has been elected to active membership in the American Academy of General Practice.

### **Hudsons Entertain Visiting Doctors**

Dr. and Mrs. William A. Hudson were host in June to Dr. and Mrs. Roy M. Mills of New Lambton, New South Wales, Australia. Dr. Mills is in charge of tuberculosis research and control at the Royal New Castle Hospital. Dr. and Mrs. Paul Reagan of Little Rock were also guests of the Hudsons during the Mills' visit.

### **Dr. Viner Elected**

Dr. Donald L. Viner will take office July 1 as chief of staff at the Saline Memorial Hospital and as president of the county medical society. Dr. James C. Bethell was re-elected vice chairman and secretary of both the staff and medical society.

### **New State Post**

Dr. Lee G. Sewall, formerly with the Veterans Administration, will join the State Hospital staff in September as director of Arkansas Community Mental Health Services.

### **Dr. Holder Honored**

Dr. J. B. Holder of Monticello was presented with a plaque of appreciation by the Monticello Rotary Club in July for his many years of service to the community and county. Dr. Holder has

been forced to retire from his practice in Monticello for health reasons and will move to Little Rock.

### **Dr. Brightwell Resigns**

Dr. R. J. Brightwell, who has served as Washington County Health Officer for the past several years, resigned the position in July.

### **Arkansas Graduate Receives Award**

Dr. Harry M. Meyer, Jr., a graduate of the University of Arkansas Medical Center, has been named to receive the American Academy of General Practice-Mead Johnson Award for his significant contribution in developing a test for detecting immunization to Rubella.

### **New Physician at Malvern**

Dr. Larry Brashers has located in Malvern for the practice of medicine. He is a graduate of the University of Arkansas Medical Center.

### **Dr. Wood Joins Dr. Jackson**

Dr. C. W. Jackson of Judsonia has announced the association of Dr. Thomas O. Wood in the general practice of medicine at Judsonia.

### **Doctor Appointed**

Dr. G. Thomas Jansen of Little Rock has been appointed to the Governmental Efficiency Study Commission.

### **Dr. Hollis Elected**

Dr. Herbert Hollis has been named chief of staff at Forrest Memorial Hospital in Forrest City. Dr. H. N. Cogburn is vice chairman and Dr. Norman Saliba is secretary.

### **Dr. Graham Appointed**

Dr. Richard F. Graham has been appointed to the Federal Registration Board of the Hot Springs National Park.

### **Dr. Redman to Serve**

Dr. Pierre Redman of Mena has been appointed to the Board of the Polk County Memorial Hospital for a seven-year term.

### **Dr. Robinson Opens Museum**

Dr. G. Allen Robinson of Harrison has opened a museum on his Rally Hill Farm near Valley Springs. The museum commemorates the time when the Ozarks Region was a frontier, from the date of the Louisiana Purchase in 1803 until 1890.



## PROCEEDINGS OF SOCIETIES

### Medicare Contract With Society To Be Terminated

The office for the Civilian Health and Medical Program of the Uniformed Services has notified the Arkansas Medical Society that its contract to administer the Military Dependents' Medical Care Program in Arkansas will not be renewed. The action was taken because of an alleged "conflict of interest" seen by the Defense Department in a Medical Society paying usual and customary fees to its own members. Contracts with all other Medical Societies acting as fiscal administrator for the program have been similarly cancelled.

The Council of the Arkansas Medical Society requested that the contract be terminated at the earliest possible date. It is anticipated that this will be accomplished by the end of the year.

The Council of the Arkansas Medical Society recommended that Blue Cross-Blue Shield be appointed fiscal agent for Arkansas.

Following is the letter from General Peatfield giving the government reasons for its decision. Following that is the Society's reply.

Joseph A. Norton, M. D., President  
Arkansas Medical Society  
8570 Cantrell Road

Little Rock, Arkansas 72207

Dear Doctor Norton:

We have recently received a communication from the Assistant Secretary of Defense (Manpower), Washington, D. C., that it is his desire, and I quote that:

"1. In those states where no contracts exist with state medical societies the 'usual, customary, and reasonable' fee concept developed by the Social Security Administration in implementing the Social Security Amendments of 1965 should be followed.

"2. In each state where a contract exists with a state medical society prescribing local schedules of allowances, the policy specified in Item 1 should be implemented effective upon termina-

tion of the present contract."

As you may know, in implementing the Social Security concept, the carriers in their contracts with the Social Security Administration are required to determine reasonable charges with respect to services to any eligible beneficiary. Also, in determining the reasonable charge for such services, the carrier is required to take into consideration the customary charges for similar services generally made by the physician furnishing such services, as well as the prevailing charges in the locality for similar services. In addition, the carrier must take such actions as may be necessary to assure that such charges are not higher than the charges applicable for comparable services furnished policy holders and subscribers of the carrier under similar circumstances. Further, in carrying out these duties, the carrier is required to the extent that it is practical: (1) consult with, and take into consideration, the advice of state and local organizations of physicians and, as appropriate, other organizations in the health field, and (2) utilize such societies and/or associations or other groups to provide advice and assistance in cases where eligible individuals, physicians, or other persons furnishing services disagree with the carrier's determinations.

As the medical societies and/or associations are not involved in selling health insurance or making payments to policy holders or subscribers and in order to avoid any possible question of conflict of interest, since such organizations do have a significant part in the prescribing of local schedules of fees, we have been further advised that all arrangements involving the use of state medical societies and/or associations as fiscal agents for the payment of physicians bills be discontinued upon the termination of the present contracts with such organizations.

As you are aware, it is in keeping with the desires of most state medical societies and/or associations and the American Medical Association that all physicians be paid customary and reasonable fees. It is anticipated this will be the result when the Social Security concept is fully implemented, rather than being restricted to a Schedule of Maximum Allowances such as that which was negotiated between our respective office and which has been in effect for a number of years. I trust that you will appreciate that to implement this concept and confirming recent discussions of this matter between my Contracting Officer,

Colonel William H. Hayes, and representatives of your organization, it will be necessary to make arrangements with another fiscal agent upon the termination of our present contract. We would certainly welcome your comments and suggestions in this regard.

In the absence of subsequent mutually agreed upon arrangements this letter may be considered as formal notice to terminate the contract as contemplated in Article 13 of the schedule to the contract.

Please know this decision in no way reflects upon the efficient, effective, and very capable manner in which your medical society has and is carrying out its responsibilities.

Further, please be assured that it is our hope to continue the same close and cordial relations with your society that we have enjoyed in the past. We believe that informal non-contractual arrangements are of distinct benefit to your society and the government. Certainly the stability, understanding, and comparatively smooth operation of our program has been a result, in large part, of the interest and cooperation of your medical society and the physicians of Arkansas.

Sincerely  
Norman E. Peatfield  
Brigadier General, MC, U.S.A.  
Executive Director

Brigadier General Norman E. Peatfield, MC, USA  
Executive Director  
Office for the Civilian Health and  
Medical Program of the Uniformed Services  
Office of the Surgeon General, U. S. Army  
Denver, Colorado 80240  
Dear General Peatfield:

Please refer to your letter of July 21, 1967, addressed to the president of the Arkansas Medical Society notifying him of the Defense Department's decision to terminate the contract between it and the Arkansas Medical Society on March 31, 1968, under Article 13 of the contract.

The president, Dr. Joseph A. Norton, read the above-referenced letter to the Council of the Arkansas Medical Society at its meeting on August 13th.

It has been the desire of the Arkansas Medical Society to cooperate with the government in the administration of government medical care plans in the interest of good care for the patients and to try to guide the plans into a course which would not greatly conflict with the private practice of

medicine. The Society regrets that the government has decided to terminate the relationship which has existed for the past eleven years.

However, since the contract is not to be continued, our organization can see no purpose in continuing to provide the service until March 31, 1968. It was the decision of the Council to request that your office—under the provisions of Article 11 of the Schedule of the contract—terminate the contract as soon as arrangements can be made to transfer the program to another fiscal agent. We hope that this can be accomplished within ninety days, or not later than December 31st. Your early advice as to possible termination dates will be most appreciated.

The Council appreciates your giving the Society an opportunity to suggest our successor as fiscal agent for the program in Arkansas. Arkansas Blue Cross-Blue Shield, Inc., was recommended by the Medical Society for the Over-Age-65 Medicare Program. It is our understanding that the Arkansas Program has one of the best operational records in the United States. We believe that a similar record would be achieved for OCHAMPUS should Blue Cross-Blue Shield be appointed fiscal agent. We wish to recommend them for the assignment.

Please be assured of our continuing desire to cooperate in a smooth and efficient transfer of responsibilities to the new fiscal agent for the benefit of all concerned.

/S/ Paul C. Schaefer  
Executive Vice President



#### DR. BENJAMIN WAYNE DROMPP

Dr. Benjamin Wayne Drompp, age 46, died July 9th, 1967. He was professor and chairman of the Division of Orthopedic Surgery at the University of Arkansas Medical Center. He had a primary interest in rheumatoid arthritis and was doing research in the treatment of rheumatoid arthritis with chemicals injected into the infected joints.

Dr. Drompp was a native of Logansport, Indiana. He received his bachelor's degree from

Wayne State University at Detroit in 1949, and was awarded his doctorate there in 1953. He served his internship at St. Joseph Mercy Hospital in Detroit and completed his general surgery residency there in 1955. He was certified by the American Board of Orthopedic Surgery in 1961. He was an instructor at Wayne State from 1958 until 1962, when he accepted the position in Arkansas. He was a member of the Michigan State Medical Society as well as the Arkansas Medical Society and the AMA, the Detroit Academy of Orthopedic Surgeons and the American Academy of Orthopedic Surgeons. He organized and presented annually a clinic on athletic injuries at the Arkansas High School Coaches Clinic at the Medical Center and served as consultant specialist for injuries suffered by players in the annual All-Star games at Little Rock. He was also chief consultant in orthopedic surgery at the Veterans Administration Hospital at Little Rock. He has recently received federal funds to plan a medical rehabilitation unit at the Medical Center. A Benjamin W. Drompp Medical Rehabilitation Fund has been established at the University Medical Center in Little Rock.



## NEW MEMBERS

A new member of Pulaski County Medical Society is DR. WILLIAM BRUCE BISHOP, a native of Caney, Kansas. He attended college at the University of Arkansas at Fayetteville and he received his M.D. degree from the University of Arkansas School of Medicine in 1962. He interned at the University of Arkansas Medical Center. He served in the U. S. Army from 1954-1956. Dr. Bishop's office address is 400 Pershing Boulevard, North Little Rock, Arkansas. His specialty is internal medicine.



### MRS. LONG NAMED PRESIDENT-ELECT OF AMA AUXILIARY

Mrs. C. C. Long, Ozark, Arkansas, has been named president-elect of the Woman's Auxiliary to the American Medical Association. She will be installed as president at the 1968 convention in San Francisco.

Mrs. Long, who had just completed a two-year term as auxiliary first vice president, was elected during the organization's annual convention, held in Atlantic City June 18-22. She had previously served a three-year term as Auxiliary Rural Health Chairman. Noted for her interest and active participation in community service, Mrs. Long was for two years chairman of the Arkansas Girl's Training School Board of Control. She is also a charter member and health chairman of the Arkansas Women's Committee in Public Affairs. She was named the "Progressive Farmer's" 1964 Arkansas Woman of the Year.

In Ozark, she serves as chairman of the Chamber of Commerce Recreation Committee, a member of the Garden Club and the Garden Club Council. She also is a charter member of Chapter A, TTT, a Charity Organization. Through her efforts, TTT established a program to buy extra milk for undernourished children and to purchase school lunches and glasses for those children who could not pay for their own.

The founder of the Cub Scout, Girl Scout and Brownie Troops in Ozark, Mrs. Long instigated the Summer baseball and swimming programs for these groups, driving the children 40 miles for swimming lessons.

She has served as chairman of the Ozark Community Improvement Committee for several years. In this capacity, she was responsible for setting up the city park, for which she built two barbecue pits herself, and for organization of the teen center.

Mrs. Long has served her local and State Auxiliaries in many capacities, serving several terms as chairman of committees on Rural Health and

Legislation. She is a past president of the Woman's Auxiliary to the Arkansas Medical Society and is a past secretary of the Arkansas Political Action Committee.



MRS. C. C. LONG  
OZARK  
PRESIDENT-ELECT  
Woman's Auxiliary to the  
American Medical Association



## Memorials

We have received the following gifts to the Memorial and Honor Fund:

In memory of Mrs. Robert F. Hyatt, Sr.

Miss Eliza Catharine Murphy

Little Rock, Arkansas

Dr. and Mrs. H. W. Thomas

Dermott, Arkansas

In memory of Dr. Paul L. Mahoney

Dr. C. Lewis Hyatt

Monticello, Arkansas



## BOOK REVIEWS

*DEVELOPMENT OF THE LUNG*—Edited by A. V. S. deReuck, and Ruth Porter. Little, Brown and Company, Boston, 1967.

This is a rather technical text which would be of interest to specialists in lung diseases, embryologists, and histologists. It is of no interest to the practicing physician.

*ENDOCRINOLOGY OF THE TESTIS*—Edited by G. E. W. Wolstenholme and Maeve O'Conner. Little, Brown & Company, Boston, 1967.

This test has a rather good spectrum of discussion pertaining to hormones secreted by the testis. The text is of interest to the gynecologist, urologist and endocrinologist.

*THIAMINE DEFICIENCY, Biochemical Lesions and Their Clinical Significance*—edited by G. E. W. Wolstenholme and Maeve O'Conner. Little, Brown and Company, Boston, 1967.

This textbook has an excellent description of the enzymes studies in thiamine deficiency. There is a discussion of human beri-beri, which is of interest to the practicing physician. In general, however, this book is of very limited interest to the practitioners.



### Assessment of the Tuberculin Tine Test

R. F. Shaw, R. A. Beargie, and H. D. Riley, Jr. (Dept. of Pediatrics, Univ. of Oklahoma, Oklahoma City) *Dis Chest* 51:162-165 (Feb.) 1967

Old tuberculin 0.05 mg applied in the form of the tine test, as well as the intermediate strengths PPD-S (human) PPD-A (avian) and PPD-B (battery) by the Mantoux method were applied simultaneously to 556 American Indian teenage students living in Oklahoma boarding schools. This group had a relatively high reactor rate to all antigens used. The average size reaction to the PPD-S antigen was almost three times greater than that of the anonymous mycobacterial antigens. There was 96.4% correlation between the tine and the PPD-S.

# T U B E R C U L O S I S



# A B S T R A C T S

Sponsored by Arkansas Tuberculosis Association

## SMOKING, PULMONARY FUNCTION, AND RESPIRATORY SYMPTOMS IN A COLLEGE-AGE GROUP

*A group of college seniors were given a questionnaire on respiratory symptoms and also lung functional changes compatible with those expected in early chronic nonspecific respiratory disease.*

People are generally aware of the long-term effects of prolonged and heavy smoking, but there is little information on the early effects of smoking and its associated morbidity. While lung cancer is recognized as a potential consequence of smoking, the causal relationship of smoking with chronic nonspecific pulmonary disease (emphysema-chronic bronchitis) is less widely appreciated.

In a study undertaken to assess respiratory symptoms and to see if there were measurable pulmonary effects of smoking in the young adult, 100 Harvard College seniors chosen at random were asked to complete a questionnaire on respiratory symptoms and to perform simple tests of lung function. There were so few heavy smokers in the original group that 33 seniors who had been smokers as freshmen were added. Of the 133,124 completed the examination.

Heavy smokers were defined as those who had smoked the equivalent of at least one pack per day for their four college years (29 seniors). Non-smokers were those who had never smoked as much as one cigarette a day regularly (41). Moderate smokers were defined as all other smokers, including pipe and/or cigar smokers (54).

After completing a questionnaire on respiratory symptoms, each student was weighed, measured for height, and asked to take breathing tests. From the tracings of vital capacity tests on a Stead-Wells spirometer, the following indices were determined: vital capacity (VC), forced expiratory volume in one second ( $FEV_1$ ), the ratio of  $FEV_1/VC$ , and the flow rates at 75, 50, 25, and 10 per cent of vital capacity.

JOHN M. PETERS, M.D.; BENJAMIN G. FERRIS, JR., M.D.  
*American Review of Respiratory Disease, May, 1967.*

## SMOKERS COUGHED MORE

Answers to the questionnaires showed that the smokers had significantly more cough during the day or at night than the nonsmokers (10.8 versus 6 per cent); more phlegm in the morning in the winter (21.7 versus 0 per cent); more periods of increased phlegm production lasting three months or more (26.5 versus 2.4 per cent); more bouts of increased cough and/or phlegm lasting three weeks or more (20.5 versus 4.9 per cent); more breathlessness (20.5 versus 2.4 per cent); more wheezing with colds (46 versus 17.1 per cent); more wheezing apart from colds (31.3 versus 7.3 per cent); and greater frequency of chest involvement with colds (31.3 versus 4.9 per cent).

In general, there was a trend toward a higher frequency of symptoms with an increase in lifetime packs smoked. No significant difference was noted between the smokers and the nonsmokers with past history of bronchitis, pneumonia, sinus trouble, tuberculosis, hay fever, and bronchial asthma.

Results of the pulmonary function tests showed no significant difference in vital capacity among the groups. While there was a downward trend in  $FEV_1$  values with increased smoking, the difference between nonsmokers and heavy smokers was not significant. As smoking increased, the ratio of  $FEV_1$  to VC decreased. There was a significant difference in this ratio between the nonsmokers and heavy smokers, with the moderate smokers falling in-between.

## FLOW RATES COMPARED

Flow rates for the nonsmoker differed from those of the heavy smokers to a highly significant degree. In every case the moderate smoker had an intermediate position between the two extreme values. Flow rates for pipe and cigar smokers were appreciably lower than for nonsmokers, as were those for ex-smokers.

The time at which the student last smoked was not determined because of conflicting information as to its importance. Ten ex-smokers who had completely abstained from smoking for at

least one month (in order to be called an ex-smoker) had flow rates that were still significantly lower than those of the nonsmokers. No information is available on the reversibility of these changes with cessation of smoking. The ex-smokers may have had flow rates even more depressed while they were smoking.

The relationship of chronic nonspecific respiratory disease (emphysema and bronchitis) to smoking has been well established. It has been estimated that smoking caused one million extra cases of bronchitis and emphysema between July 1, 1964 and July 1, 1965. The cost of this runs into billions of dollars in time lost from work. The threshold at which smoking produces functional changes in the lung has not been established. The data from this investigation indicate that changes can occur very early after relatively little exposure in some persons. Two previous reports have contained data on FEV<sub>1</sub> in young smokers and nonsmokers. In both cases, values for FEV<sub>1</sub> were lower in smokers than in nonsmokers in the age group from 20 to 30 years.

Although it is possible that a third variable, either of personality or constitutional origin, causes a person to smoke and to have different physiologic parameters of the lung, it does not seem likely in view of the information available. The data are difficult to explain except by a direct effect of smoking. A dose-response trend in this study offers firm evidence for this direct effect.

#### OCCASIONAL EXCEPTIONS

In a group of heavy smokers there were some who appeared to have no adverse effect from smoking. Likewise, in the nonsmokers there were a few students who had measurements similar to smokers. The degree to which the students inhaled was not ascertained. This factor may introduce some variations and undoubtedly constitutional factors are important in the response to smoking and to atmospheric pollution. None of the students had had any significant industrial exposure to dusts, gases, or fumes.

It is not known whether the decrease in flow rates in the smokers was due to an increase in outflow resistance because of bronchoconstriction or mucous secretion or to a decrease in elastic recoil.

There is strong indirect evidence, and some direct evidence, to indicate that there is a general correlation between symptoms and the decreased flow rates in smokers in this population. Respiratory symptoms show a gradation, the frequency of

symptoms corresponding with increased smoking. Using the same categories, the flow rates showed a marked decline with smoking experience.



#### Dermal Connective Tissue in Patients With Chronic Obstructive Airways Disease

B. S. Smith, N. Williamson, and B. McConkey (Dudley Rd. Hosp., Birmingham 18, England) *Lancet* 1:341-343 (Feb. 18) 1967

Thirty-seven men with chronic obstructive airways disease were compared with 38 men of the same age who had no evidence of respiratory disease. Most of the patients with airways disease had skin which looked like that of older people. When measured the skin was found to be thinner than in the controls. The differences were not due to simple wasting. The thickness of the dermis was reduced, and its collagen was altered in arrangement and in staining characteristics. This abnormality of the dermis shows some of the features of, but is probably not identical with, transparent skin. It is not yet clear whether the abnormality of the skin is the consequence of prolonged respiratory disease or whether it reflects a primary defect.

#### Relative Efficacy of Indomethacin and Aspirin in Rheumatoid Arthritis

R. S. Pinals and S. Frank (Lemuel Shattuck Hosp., 170 Morton St., Boston) *New Eng J Med* 276: 512-513 (March 2) 1967

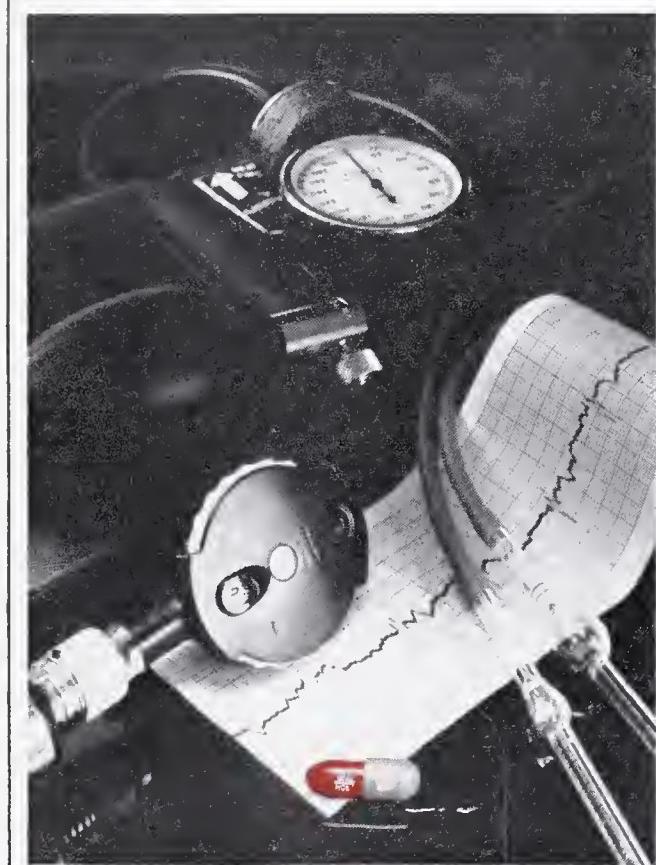
Indomethacin, a new anti-inflammatory and analgesic drug, was used in the treatment of rheumatoid arthritis. In order to investigate the relative effectiveness of indomethacin and aspirin, the drug most widely used in the management of this disease, a double-blind crossover study was performed. Each medication was given to 24 patients, in random order, for one month. Measurements were made of grip strength, sedimentation rate, and the number of tender and swollen joints. No significant difference between the two medications was found in these objective measurements or in patient preference. Side effects did not differ in frequency or severity, but headache was noted more commonly with indomethacin and auditory symptoms with aspirin.

November, 1967

THE  
JOURNAL  
OF THE  
*Arkansas* MEDICAL  
SOCIETY

Vol. 64 No. 6

FORT SMITH, ARKANSAS



Among the adjuncts to the physician's skill

**Darvon® Compound-65**

Each Pulvule® contains 65 mg. propoxyphene hydrochloride, 227 mg. aspirin, 162 mg. phenacetin, and 32.4 mg. caffeine.

*Lilly*

Additional information available to the medical profession upon request.  
ELI LILLY AND COMPANY, INDIANAPOLIS, INDIANA 46206  
701133

# Dilantin®

(diphenylhydantoin)

PARKE-DAVIS

In untold thousands of  
epileptic patients...  
Dilantin has been, and  
continues to be, the  
bedrock of therapy.

DILANTIN is useful in the treatment of grand mal epilepsy and certain other convulsive states. Its use will prevent or greatly reduce the incidence and severity of convulsive seizures in a substantial percentage of epileptic patients, without the hypnotic and narcotizing effects of many anti-convulsant drugs.

**PRECAUTIONS:** Periodic examination of the blood is advisable. Nystagmus in combination with diplopia and ataxia indicates dosage should be reduced. The possibility of toxic effects during pregnancy has not been explored.

**ADVERSE REACTIONS:** Allergic phenomena such as polyarthropathy, fever, skin eruptions, and acute generalized morbilliform eruptions with or without fever. Rarely, dermatitis goes on to exfoliation with hepatitis, and further dosage is contraindicated. Gingival hypertrophy, hirsutism, and excessive motor activity are occasionally encountered. During initial treatment, side effects may include gastric distress, nausea, weight loss, nervousness, sleeplessness, feeling of unsteadiness. Macrocytosis, megaloblastic anemia, leukopenia, granulocytopenia, thrombocytopenia, pancytopenia, agranulocytosis, and aplastic anemia have been reported. Nystagmus, lymphadenopathy, lupus erythematosus, erythema multiforme (Stevens-Johnson syndrome), and a syndrome resembling infectious mononucleosis with jaundice have occurred.

DILANTIN is supplied in several forms including Kapseals® containing 0.1 Gm. and 0.03 Gm. diphenylhydantoin sodium.

Parke, Davis & Company, Detroit, Michigan 48232

The color combinations of the banded capsules are Parke-Davis trademarks. The orange-banded white capsule identifies Parke-Davis 0.1 Gm. diphenylhydantoin sodium; the pink-banded white capsule 0.03 Gm. diphenylhydantoin sodium.

**PARKE-DAVIS**

015R67



# LACTINEX<sup>®</sup>

TABLETS & GRANULES

■ to help restore and stabilize  
the intestinal flora

■ for fever blisters and canker  
sores of herpetic origin

LACTINEX contains both *Lactobacillus acidophilus* and *L. bulgaricus* in a standardized viable culture, with the naturally occurring metabolic products produced by these organisms.

First introduced to help restore the flora of the intestinal tract in infants and adults,<sup>1, 2, 3, 4</sup> LACTINEX has also been shown to be useful in the treatment of fever blisters and canker sores of herpetic origin.<sup>5, 6, 7, 8</sup>

No untoward side effects have been reported to date.

*Literature on indications and dosage available on request.*

#### References:

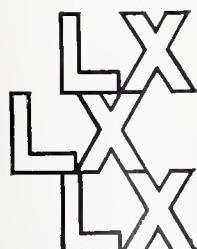
- (1) Siver, R. H.: CMD, 21:109, September 1954. (2) Frykman, H. H.: Minn. Med., 38:19-27, January 1955. (3) McGivney, J.: Tex. State Jour. Med., 51:16-18, January 1955. (4) Quehl, T. M.: Jour. of Florida Acad. Gen. Pract., 15:15-16, October 1965. (5) Weekes, D. J.: N.Y. State Jour. Med., 58:2672-2673, August 1958. (6) Weekes, D. J.: EENT Digest, 25:47-59, December 1963. (7) Abbott, P. L.: Jour. Oral Surg., Anes., & Hosp. Dental Serv., 310-312, July 1961. (8) Rapoport, L. and Levine, W. I.: Oral Surg., Oral Med. & Oral Path., 20:591-593, November 1965.

**HYNSON, WESTCOTT  
& DUNNING, INC.**



BALTIMORE, MARYLAND 21201

(LX04)



**THE  
JOURNAL OF THE  
Arkansas  
MEDICAL SOCIETY**

Owned by  
**THE ARKANSAS MEDICAL SOCIETY**  
And Published Under Direction of the Council

**ALFRED KAHN, JR., M.D., Editor**  
**1300 West Sixth Street Little Rock, Arkansas**

**MR. PAUL C. SCHAEFER, Business Manager**  
**218 Kelley Bldg. Fort Smith, Arkansas**

**LITTLE ROCK BUSINESS OFFICE**  
**114 E. Second St. Little Rock, Arkansas**

OFFICERS OF THE ARKANSAS MEDICAL SOCIETY  
 JOSEPH A. NORTON, President ..... Little Rock  
 H. W. THOMAS, President-Elect ..... Dermott  
 JEROME LEVY, First Vice President ..... Little Rock  
 DAVID H. PONTIUS, Second Vice President ..... West Memphis  
 GEORGE F. WYNNE, Third Vice President ..... Warren  
 ELVIN SHUFFIELD, Secretary ..... Little Rock  
 W. R. BROOKSHER, Secretary Emeritus ..... Fort Smith  
 BEN N. SALTZMAN, Treasurer ..... Mountain Home  
 JOHN P. PRICE, Speaker, House of Delegates ..... Monticello  
 AMAIL CHUDY, Vice Speaker,  
     House of Delegates ..... North Little Rock  
 ALFRED KAHN, JR., Journal Editor ..... Little Rock  
 JAMES M. KOLB, SR., Delegate to AMA ..... Clarksville  
 JACK KENNEDY, Delegate to AMA ..... Arkadelphia  
 C. C. LONG, Alternate Delegate to AMA ..... Ozark  
 ALFRED KAHN, JR., Alternate Delegate to AMA ..... Little Rock  
 MR. PAUL C. SCHAEFER, Executive Vice President,  
     P.O. Box 1208 ..... Fort Smith

**COUNCILORS**

First District	ELDON FAIRLEY ..... Osceola
	B. P. RANEY ..... Jonesboro
Second District	PAUL GRAY ..... Batesville
	HUGH R. EDWARDS ..... Searcy
Third District	PAUL MILLAR ..... Stuttgart
	L. J. P. BELL ..... Helena
Fourth District	T. E. TOWNSEND ..... Pine Bluff
	ALBERT W. LAZENBY ..... Dumas
Fifth District	KENNETH R. DUZAN ..... El Dorado
	PAUL SIZEMORE ..... Magnolia
Sixth District	KARLTON H. KEMP ..... Texarkana
	JOHN P. WOOD ..... Mena
Seventh District	JACK KENNEDY ..... Arkadelphia
	ROBERT F. McCRARY ..... Hot Springs
Eighth District	WILLIAM PAYTON KOLB ..... Little Rock
	JAMES R. MORRISON ..... Little Rock
Ninth District	STANLEY APPLEGATE ..... Springdale
	ROSS FOWLER ..... Harrison
Tenth District	C. C. LONG ..... Ozark
	A. S. KOENIG ..... Fort Smith

The Advertising policy of this JOURNAL is governed by the PRINCIPLES OF ADVERTISING of the State Medical Journal Advertising Bureau, Inc., by the Advertising Committee of the Bureau and by the Council of the Arkansas Medical Society.

*EXCLUSIVE PUBLICATION—Articles are accepted for publication on the condition that they are contributed solely to this JOURNAL.*

*COPYRIGHT 1967—By the JOURNAL of the Arkansas Medical Society.*

*NEWS—Our readers are requested to send in items of news, also marked copies of newspapers containing matter of interest to the membership.*

**SCIENTIFIC ARTICLES**

Knowledge of Heart Disease  
in a Rural Community ..... 203  
*Alex S. Freedman, M.D.*

The Effects of Certain Central  
Nervous System Stimulants  
Upon the Spontaneous Activity  
of Mice exposed to High  
Altitude and Low Partial  
Pressure of Oxygen ..... 208  
*J. Huff, C. Olmstead and  
J. E. Stone, M.D.*

Marriage Counseling As a  
Responsibility of the Physician .... 211  
*Raymond W. Waggoner, M.D.*

**FORUM FROM THE DEPT.  
OF OBGYN**

Pregnancy in the Adolescent  
Female ..... 215  
*Stacy R. Stephens, M.D.*

**FEATURES**

What is Your Diagnosis? .....	223
EEG of the Month .....	224
Arkansas Public Health at a Glance	225
Resolutions .....	226
Editorial .....	227
Medicine in the News .....	229
Announcements and Things to Come .....	230
Obituary .....	231
Personal and News Items .....	232
Proceedings of Societies .....	237
New Members .....	236
Women's Auxiliary .....	239
Book Review .....	241
Tuberculosis Abstracts .....	242

# Knowledge of Heart Disease in a Rural Community

Alex S. Freedman\*

## I. Introduction

The overall design of this study is, specifically, to find out what people know about Heart Disease, what meaning and significance this has to them, how they learn to transmit this health information, and how this cluster of health information determines what they actually do to avoid the consequences of this serious disease. Our questionnaire is of a simple, one-visit type. Interviews were conducted in the home or in close proximity to the home where necessary. Certain questions were of the "open-end" type which allows for some diversity and variation.

The end product of the continuing process of the dissemination of health information is what the public actually knows about component entities which constitute a cluster of health oriented practices. Thus, in seeking out information concerning the meaning of heart disease in a small, rural, Missouri community, we are interested in only one unique aspect of this cluster of knowledge and related behavior, namely the implications of heart disease, *per se*. In a secondary way we are able to see what results have been achieved by mass media, physicians, voluntary health agencies and public health specialists in getting over the message and meaning of good health practices in a community.

## II. Framing the Study

Several studies may be indicated here for purposes of lending depth and perspective. Lionberger and Coughenour, for example have discussed such relevant points as "locality status" and "in-group orientation".<sup>1</sup> This helps to explain how community action may develop. Chapin speaks of field interviews with respect to the experimental design of a study.<sup>2</sup> Hyman and associates places the interview within the proper focus.<sup>3</sup> Greenwood posts problems to expect in undertaking a survey type of study.<sup>4</sup> On validity of the answers of respondents, one source says:

"... answers of respondents in surveys might be invalid, yet urge that measures taken to assess and improve their validity be introduced on a systematic basis, by checks introduced analytically or by instituting new modes of questioning, interviewing and the like."<sup>5</sup>

This same source questions the mental attitude of the respondent as well as the interviewer.<sup>6</sup> Thus, caution is the condition of any survey study and findings should always be evaluated as relative to the social situation.

Data was gathered during the latter part of 1962. A simple random sample method was utilized. This is a pilot study of a proposed state-wide survey now in process of development. The total sample consisted of slightly less than 100 interviews evenly divided between male and female. This report, then, is conceived only with the most significant findings.

An important question of the survey was, "Where do you receive most of your information about heart disease?" The results were most even with respect to mass media and personal contacts or interaction with others and one's physician. For example: 16 per cent watched television, 19 per cent read magazines and 18 per cent read daily newspapers. From the point of view of personal contacts some 14 per cent of the respondents received information about heart disease from their doctors and about 10 per cent learned about such matters from talking with others.

Thus, we must accept as fact that which we ask and receive as fact. Whatever adjustments are necessary when the data are in should never upset the original plan of the study.

Although this is not a health survey, we can gather some insight from one who has been concerned with the sociology of heart disease.

- (1) Health surveys may meet with resistance.
- (2) Some of this resistance may come from physicians.
- (3) Local studies of health must be related to the national scene.

\*University of Southwestern Louisiana, Lafayette, Louisiana.

(4) Heart disease is, relatively, a function of poverty.<sup>7</sup>

Borrowing some of the above theory we may say:

(1) Knowledge of Heart Disease is related to actual experience with the disease.

(2) Mass media do not communicate knowledge of Heart Disease in depth.

(3) There is little if any relationship between socio-economic conditions and knowledge of heart disease.

### III. The Important Findings

One of the important results of this study shows that *mass media* accounts for more diffusion of information concerning heart disease than *other sources*. When asked if they heard about heart disease from mass media the percentages of "yes" as opposed to "no" answers were as follows:

Table I.

Radio	69 per cent
TV	76 per cent
Magazines	67 per cent
Newspapers	70 per cent

These same respondents in Central City showed a lesser degree of information received in conventional institutional channels which involve human interaction on their part:

Table II.

School	19 per cent
Heart Association	26 per cent
Family Members	10 per cent

From the above (see Tables I. and II.) we might conclude that it is easier to turn on the switch of a TV set or radio or to pick up a magazine or newspaper than it is to participate in programs of the school and heart association or to discuss this problem with other members of the family. What we do not know, however, is the depth and extent of comprehension of this information as compared to that learned from institutions and persons within the community. Thus, even though negative responses of 80 per cent for the school, 74 per cent for the heart association and 90 per cent for family members appears overwhelmingly significant in discounting these areas as important means of information about heart disease, these may be, from a qualitative point of view, much more important than they would seem to be.

One might ask why some families are "health" minded and others not in a particular community.

Hassinger and McNamara offer keen insight into this problem when they say that:

"For some families a continuing health problem existed because of chronic conditions. For example, in one family, the wife was reported to have an arthritic condition that confined her to bed most of the time. The husband did most of the housework including meal preparation. This was an extreme case and most of the chronic conditions reported were not confining. However, they represented a family burden ranging from inconvenience through partial limitation of activity to complete confinement. Chronic illness also posed the threat of intermittent outbreak, or of progressive deterioration."<sup>8</sup>

It would be difficult, however, even somewhat premature to state a specific hypothesis at this time with respect to family or individual differentials involved in origin and transmission of health information and heart disease in particular. This condition exists in other related fields. One source points out that:

"The lack of specificity of hypotheses in research in the field of mental health has been noted in the literature. The editors of the *American Journal of Public Health*, for example, have said: 'A definite hypothesis, with a clearly stated plan for testing it, is still relatively rare in the mental health field.' "<sup>9</sup>

Thus any data as evaluated here can only point to the more superficial values, habits, practices, meanings, and understandings of the selected members of this rural community who are the respondents. A look at age, sex, education and income gives us a better perspective of the sample.

Only 7 per cent of those interviewed were 30 years of age or younger; 25 per cent of the respondents were within the category of 45 to 54 years of age.

Table III.

Age	Number	Per Cent
Under 30	7	7.2
30-44	18	18.8
45-54	24	25.0
55-64	16	16.7
65-69	12	12.5
70-79	14	14.6
80+	5	5.2
Total	96	100.0

One can see from Table III that we are working with an aging group in this particular rural

community. In addition to aging and allowing an equal division for sex we find that the majority of the respondents had from 8 to 12 years of schooling; few had less or more than this amount of education.

Table IV.

Years of Schooling	Number	Per Cent
Less than 8 years	8	8.3
8 years	32	33.3
9-11 years	14	14.6
12 years	29	30.3
over 12 years	9	9.4
Other	4	4.1
Total	96	100.0

Seventy-three per cent of these interviewed had incomes of less than \$1,000. Some 14 per cent had incomes between \$4,000 and \$5,000 and only 7 per cent indicated annual incomes of between \$5,000 and \$7,000. Occupations of the townspeople were clustered around agriculture.

Table V.

Occupation	Number	Per Cent
Farming	46	50.0
Laborers	10	10.9
Carpenters	7	7.6
Self-employed	5	5.4
Skilled	5	5.4
All others	19	20.7
Total	92	100.0

From Table V we can see that half of the male heads of households were engaged in some phase of farming, most as owner-operators of their own farms. Also, several of the laborers and carpenters were either part-time or retired from farming. The "All Other" classification included such diverse occupations as draftsmen, teacher, minister, pest control specialist, rural mail carrier, athletic coach for a college and a manager of a local lumber yard. There appears to be some relationship between farming and the occupation of carpentry. Most of those who considered themselves as carpenters were retired from farming.

Nearby local industries include a brick plant, a machinery plant, and strip-coal operation. There is even some yard employment here on the railroad. Employment and occupations show a strong agricultural base which is to be anticipated;

this is supported by the building trades and the several local industries located in nearby towns and cities.

Looking back to Table III we can see that most of our sample are within the older group; some 75 per cent are 45 years of age or older—20 per cent of the group are over 70 years of age.<sup>10</sup> Thus, we have the factor of retirement and part-time employment. Over 30 per cent of our sample considered themselves retired. The usual pattern was to retire from farming but to take up carpentry or painting or being a janitor or night watchman. Yet, with this older group we found that only some 5 per cent of the respondents had actually suffered with any phase of heart disease.

When asked which they would be most likely to do, discuss heart disease quite often with friends and relatives or seldom talk about heart disease among friends and relatives, 15 per cent indicated the former and 82 per cent the latter—3 per cent did not respond. Also when asked whether they discussed only the disease itself or a person who had the disease, close to 70 per cent indicated the latter.

Two questions included warning which are analyzed below:

Table VI.  
Has anyone ever warned you about:

	Yes	No
Heart Disease?	18	18.8%
Your Diet?	21	21.9%
Your Work?	15	15.6%

Table VII.  
Have you warned anyone about:

	Yes	No
Heart Disease?	22	22.9%
Their Diet?	23	24.0%
Their Work?	15	15.6%

The warning questions proved somewhat negative. Yet, such commonplace information which is usually exchanged between friends or family members does not lend itself to situational analysis of the highest order. It may well be that "warnings" as such, with respect to heart disease are much more significant than indicated here.

Frequency of visits to one's doctor indicates that close to 70 per cent of our respondents visit their physicians at least once each year. This, of course, is not necessarily to prevent or treat heart disease. We find the full range of variation in Table VIII below:

Table VIII

How frequently do you see your doctor?		
Interval	Number	Per Cent
Every 6 months	41	42.8
Every year	25	26.0
Every 2 years	10	10.4
Every 5 years	8	8.3
More than 5 years	4	4.2
Only when needed	4	4.2
Almost never	3	3.1
Other	1	1.0
Total	96	100.0

It may be assumed, however, that the most positive approach to this health problem is exhibited by the pattern of office visits to doctors as shown in the above table.

When asked whether heart disease was one form of sickness or many forms of sickness, close to 80 per cent replied that it was the latter. Also, when asked at what ages people are most likely to have heart attacks, 24 per cent stated that this would occur between the ages of 20 to 45, whereas almost 60 per cent said that this would happen between the ages of 45 to 65. Less than 30 per cent of our respondents felt that it was possible to inherit a form of heart disease.

Questions were asked about medical terms such as "electrocardiogram", "cholesterol" and "hypertension". In most of the cases (except for "arteriosclerosis") respondents indicated that they knew the meaning of the terms. Yet, when asked what they meant, the majority of cases indicated only a vague understanding or in some cases no knowledge or only partial knowledge of the terms. We might conclude from this that mass media do not teach specific health concepts but only the vague generalizations which a projected mass audience can comprehend.

When asked to rank heart disease, cancer, polio and TB on the basis of which is responsible for the most deaths in the nation during a one-year period, cancer (41 per cent) ranked close to heart disease (49 per cent). Polio and TB were placed third and fourth in that order. From the personal experience of interviewing, however, it may be stated that the fear of cancer is much greater than that of heart disease.

One of our important findings is related to the following:

How likely is it for a person to have heart disease without knowing it?

Table IX

	Number	Per Cent
Quite likely, lots have it without knowing it	54	65.3
Possible, but not very likely	22	22.9
If you had it you would know it	16	16.7
Don't know	4	4.2

This attitude probably explains why cancer is feared more than heart disease, the strong belief that it is possible to have heart disease without knowing it. Another consideration revolves around caring for the sick. The patient with cancer may suffer a great deal. The heart disease patient may appear normal to all outer appearances; he may even feel and look well.

Other findings of the study show that over 50 per cent of the respondents felt that a person could avoid heart disease. This was substantiated by a formula which included proper rest, proper diet and a lessening of tension on the job. Some 70 per cent of our sample felt that there were "warning signals" for heart disease. Those included such symptoms and sensations as "tingling in the toes", "pain in the chest", "dizziness" and that "all-out" feeling.

When asked what types of people are most likely to have heart disease, the following results were obtained:

- Fat people more than thin people
- Old people more than young people
- Men more than women
- City people more than farming people
- Office workers more than manual laborers

Also of some importance in the findings are that our respondents felt that a person's chances of leading a normal life with a form of heart disease were better than 50 per cent. At the same time over 80 per cent claimed that as long as there was some control over heart disease, complete recovery was not the important factor.

The following series of questions about work and heart disease were asked as shown in Table X:

In most cases a person who has had heart disease:

	Number	Per Cent
Can go about his work as before	3	3.1
Must slow down, continue same job	78	81.3
Some work, must give up active employment	10	10.4
Other	5	5.2
Total	96	100.0

Some 65 per cent of our sample believed that there were effective treatments for heart disease and approximately the same proportion felt that these treatments were either somewhat or exceptionally effective. When asked the positive or negative attributes of diet, work habits, medicines, regular physician examinations and physical exercise with respect to keeping one from getting heart disease, the largest proportion of the respondents felt that all of these measures were significant.

Few of our findings compare with a recent heart disease study made in Louisiana.<sup>11</sup> Similar questions have been asked in this study but since the sample is much smaller, no comparisons will be attempted here.

Knowledge and meaning of heart disease is relative to actual experience with the disease as well as interest in one's personal health and well being. It is hoped that this report has served to enlighten the reader about this important matter and to shape the future understanding of the social implications of heart disease.

#### REFERENCES

- Herbert F. Lionberger and C. Milton Coughenour, "Social Structure and Diffusion of Farm Information", Columbia, Missouri, College of Agriculture Research Bulletin 631, April, 1957, p. 9.
- F. Stuart Chapin, *Experimental Designs in Sociological Research*, New York, Harper and Brow., 1947 p. 165.
- See: Herbert H. Hyman and others, *Interviewing in Social Research*, Chicago, University of Chicago Press, 1954.
- Ernest Greenwood, *Experimental Sociology — A Study In Method*, New York, King's Crown Press, 1945, p. 131.
- Herbert H. Hyman, *Ibid.*, p. 99.
- Ibid.*, p. 138.
- Bernhard J. Stern, *Historical Sociology*, New York, The Citadel Press, 1959, p. 383.
- Edward W. Hassinger and Robert L. McNamara, "Family Health Practices Among Open-Country People in a South Missouri County", Columbia, Missouri, College of Agriculture, Research Bulletin 699, August, 1959, p. 6.
- John G. Glidewell, Ivan N. Mensh, Herbert R. Domke, Margaret C. L. Gildea and A. D. Buchmueller, "Meth-

ods for Community Mental Health Research", *The American Journal of Orthopsychiatry*, Vol. XXVII, No. 1, Jan. 1957, p. 41.

- There are two undertaker parlors in this small community which bears out the significance of aging.
- Alvin L. Bertrand and Clarence A. Storla, Jr., *Lay Knowledge and Opinion About Heart Disease*, Baton Rouge, Louisiana State University, 1955.



#### Arteriovenous Malformation With Angiodermatitis

S. M. Bluefarb and L. A. Adams (30 N Michigan Ave, Chicago) *Arch Derm* 96:176-181 (Aug) 1967

An unusual angiomatic stasis dermatitis of the leg, arising from a congenital arteriovenous Malformation, was observed in a young male diabetic. The lesions morphologically and histologically simulated Kaposi's disease. Clinical manifestations associated with congenital arteriovenous fistulae are reviewed, particularly along lines of coexistent cutaneous vascular abnormalities. The developmental pathophysiology of the stasis lesion is discussed. Subclinical anomalous arteriovenous channels may preexist in the afflicted dermatitic areas, thus giving rise to the peculiar features.

#### CORRECTION

On page 105 of the August, 1967 issue of the Journal in the article by J. K. Donaldson, M.D., A ONE STAGE OPERATION FOR NON-ADVANCED CANCER OF THE LOWER LIP, an error was made at about the middle of the third paragraph from the bottom of the page in the righthand column. The text read: ". . . over the raw surface of the superior aspect, K, FIG. II, of the flap along M and J, FIG. III . . ." It should have read: ". . . of the flap along M and L, . . ."

# The Effects of Certain Central Nervous System Stimulants Upon the Spontaneous Activity of Mice Exposed to High Altitude and Low Partial Pressure of Oxygen

J. Huff, C. Olmstead and J. E. Stone\*

## Introduction

The capacity of the Andean mountaineer to perform heavy labor at extreme altitude has been of the greatest interest not only to the original Spanish conquistadores but also to the modern physiologist and biochemist.

Although it is possible for a non-native to become acclimated to a certain degree, the stranger never acquires the ability to perform sustained hard labor at the highest of these altitudes. The natives whose ancestors ran advanced civilizations in these countries prior to the Spanish intrusion have lived in high altitudes for millennia, thus genetic selection for performance under these conditions at these altitudes has undoubtedly played a part in the phenomenon. It has been shown that the Peruvian mountaineer is biochemically adapted to high altitude and low PO<sub>2</sub>.<sup>1</sup> The stranger who has become acclimated shows biochemical changes in a similar direction, but never equals the native highlander either in this respect or in work performance.

As unique as the Andean highlander's tolerance of high altitude is his habitual use of the leaves of *Coca erythroxylon* and other species of Erythroxylaceae which of course contain the alkaloid cocaine. It is usually stated by some authorities that the use of this drug allows the Indians to carry on in their harsh environment. However, it should be pointed out that the relationship is not as clear cut as some would have it; for example, it is a fact that the Coca plant is raised at rather low altitudes,<sup>2</sup> and is used not only by the inhabitants of the high countries but also by a variety of other natives at lower altitudes. Thus, the use of cocaine by the Andean Indians has been viewed by some with tolerance and by others as merely the abuse of a drug.<sup>3</sup> The use of Cocaine has spread widely from its place of origin and the habituating characteristics of this local anesthetic are only too well known.

It is of interest that another group of individ-

uals exposed to high altitude and low PO<sub>2</sub>, the World War II bomber crews, also resorted to the use of a central nervous system stimulant, which in this case was Amphetamine, which was used with official sanction.

It was therefore considered of interest to compare the effects of Cocaine, Amphetamine, and two other drugs related in some degree to Cocaine, Atropine, and Procaine upon mice subjected to high altitude, and low PO<sub>2</sub>.

## Materials and Methods

The response of untreated mice to simulated high altitude with attendant low PO<sub>2</sub> is practical cessation of all activity. If the animals are brought back to normal conditions the effect is completely reversible. Therefore, because of this reaction the instrumentation was designed to record the activity of groups of animals, under the conditions of high and low PO<sub>2</sub>.

Essentially the equipment consisted of an activity chamber which was inside an atmospheric chamber, a system of transducers and amplifiers, and an analog recorder adjusted and modified in such a way as to integrate activity levels of groups of animals.

The atmospheric chamber consisted of a 24"x4' atmospheric pressure chamber equipped with Amphenal instrument connectors, and pipe connections which allowed partial evacuation and ad-

TABLE I

Group	Depressurization			1/2 Atmosphere		Recovery	
Control	9	6.2	2.5	1	1.7	3.2	4.5
Cocaine	25	19.0	5.5	3.5	3.5	5.5	7.0
Amphetamine	35	33.0	22.5	7.0	7.0	12.0	19.0
Atropine	6	5.5	3.5	3.0	3.5	4.5	6.0
Procaine	4.5	4.3	2.0	2.0	4.0	3.0	7.0

justment of internal pressure. The type of activity the animals were engaged in could be observed through 6" plexiglass portholes. The evacuation line of heavy walled vacuum tubing was connected by a double "Y" connection to a bleed line and to a mercury barometer, and finally to the building vacuum line which was adequate to al-

\*Department of Pharmacology, University of Arkansas Medical Center, Little Rock.

low evacuation to less than -380 mm Hg. Suitably placed valves were used to regulate the rate of evacuation and the level of the vacuum. The chamber was raised on wooden blocks resting on pads to reduce building noise and vibration to a minimum.

The activity chamber consisted of cylindrical wire cages resting on hydraulic floors which consisted of two 2 ml plastic fluid filled pillows connected via a fluid filled catheter of 1 mm I.D. to 2 Statham Model P23 AA pressure transducers whose connectors in turn led to a junction box on the inside of the vessel. A three-way valve was placed in the fluid line at the transducer to allow flushing of the lines, and evacuation of trapped air in the fluid filled floors. Externally, similar Amphenal connectors led to 2 carrier Sanborn Model 350-1100 preamplifiers which were modified with in-line capacitance to avoid change in base line due to delayed equalization of the internal transducer pressure to the drop in chamber pressure. The high side outlet leads of the carrier amplifiers led into the amplifiers of a Sanborn Model 60 amplifying pen writer which recorded at a 0.5 mm/sec. rate on heat sensitive paper. The record which was produced with the above instrumentation was an integration of the voltage changes produced by pressure fluctuation due to activity of the animals on the floor.

Appropriate control runs with empty cages were carried out. The level of "noise" was found to be quite constant, and these controls were repeated every day before test runs were commenced.

The animals were depressurized to  $\frac{1}{2}$  atmosphere (about 18,000 ft.) during a 1 hour experiment. The experiments were divided into a 15 minute depressurization period, a 30 minute period at  $\frac{1}{2}$  atmosphere followed by a 15 minute repressurization period. Each run was preceded by a short control period at normal atmospheric pressure. The drugs were given at a dosage which was  $\frac{1}{2}$  the recognized LD<sub>50</sub> for each compound. The drug dosages employed were 37, 60, 125, and 115 mgm/kgm of cocaine, amphetamine, atropine, and procaine respectively. Experiments were carried out with 0, 5, and 10 animals in the control series and in groups of 5 for each drug. The animals were male white laboratory mice obtained from the Holtzman Company whose average wgt. was 35 gms.

The measurements presented in Table I are reported in Mouse Activity Units (MAU). The

MAU was arbitrarily defined as the work output which moved the recorder pen an average deflection of 1 mm (measured as the total width of the record). A deflection of 1 mm was produced by the normal activity of 0.83 mouse under control conditions.

For the purposes of recording, the 15 minute intervals during which the pressure in the chamber was either lowered or raised were each divided into three 5 minute periods. The reading presented in Table I was the average activity over the entire 5 minute period. By the time  $\frac{1}{2}$  atmosphere was reached the level of activity declined to a constant low level so that the value reported is the mean for the entire 30 minute period. The recovery period is presented in the same way as the depressurization period. In Table I the control experiments reported represent the mean of 2 experiments with 5 animals and two with 10 animals. All the values for other groups represent the mean of two, 5 animal experiments.

### Discussion

All of the drugs used in this study are central nervous stimulants in varying degree with the possible exception of procaine. They share another pharmacological characteristic in that they produce an appearance of increased sympathetic nervous system activity peripherally, although they do this by differing mechanisms of action.

It would appear from these limited studies that a variety of CNS stimulants will maintain the activity of mice subjected to low atmospheric pressure and low oxygen tensions. The animals given cocaine maintained an activity of a type which approached normality in extent and character. It was of interest that atropine, structurally related to cocaine although it partakes of few of its pharmacological characteristics, had about the same effect as cocaine under these conditions. The animals given amphetamine showed much uncoordinated movement of a semi-convulsive nature which was probably a function of the high dosages used. The slight protective effect of procaine was probably not significant.

Therefore, there would appear to be some rational for the use of coca leaves by the Andean Highlander, although it is not certain that cocaine is the only compound which could serve their purposes.

### Summary

A method of recording the activity of groups of animals under low atmospheric pressure and low

PO<sub>2</sub> is presented. It was found that mice were able to partially maintain their normal activity under these conditions when pretreated with Cocaine or Atropine. The administration of amphetamine produced much uncoordinated activity while procaine was without significant effect.

REFERENCES

1. Jungmann, H. and Halhuber, M. J.: The Physiology of Altitude. *Medical Climatology*, 257-279, 1964.
2. Textbook of Pharmacognosy. H. Youngken, 5th Edition, Blakiston Co. Philadelphia, 1943.
3. L. L. Leon: Coca Chewing. *U. N. Bull. Narc.*, 4:21, 1952.



**Vascular Augmentation of Pedicled Tissue by Combined Histamine Iontophoresis and Hypertensive Perfusion**

L. D. Ketchum et al (Dept. of Surgery, Univ. of Kansas Medical Center, Kansas City) *Plast Reconstr Surg* 39:138-141 (Feb) 1967

Pretreatment of pedicled tissue with histamine iontophoresis does increase the survival of flaps but the effect is not predictable. Increased physical resistance to blood flow (hypertensive perfusion) combined with histamine iontophoresis produce a consistent increase in the amount of viable tissue in a pedicle flap. Dimethyl sulfoxide is also effective in increasing blood flow but its effect is not consistent and moderate edema is associated with its use.

**Radical Thoracoabdominal Adrenalectomy and Lymphadenectomy**

C. T. Polis and D. M. Woodhead (Wilford Hall USAF Hosp, Lackland Air Force Base, Tex) *Arch Surg* 95:181-184 (Aug) 1967

High malignant potential of estrogen-secreting tumors of the male adrenal cortex is emphasized and substantiated by citing previous total experience. The 54th reported case of feminizing carcinoma of the adrenal is presented. Gynecomastia was the only symptom of the 35-year-old white male. Positive findings were limited to the gynecomastia, a calcified left suprarenal mass, hyperestrinism, and oligospermia. Since radical surgery offers the only possibility of cure, a left thoracoabdominal adrenalectomy, nephrectomy, and paraaortic lymphadenectomy were performed. Recovery was uneventful. Subsequent evaluations demonstrated normal urinary estrogen excretion, normal semen analyses, and regression of the gynecomastia. Radical extirpative surgery is advocated as the preferred form of therapy in the management of these highly malignant tumors which are unaffected by radio- or chemotherapy.

**STATEMENT OF OWNERSHIP,  
MANAGEMENT AND CIRCULATION**

(Act of October 23, 1962: Section 4369, Title 39, United States Code.) Publisher: File two copies of this form with your postmaster.  
1. Date of filing, October 1, 1967. 2. Title of Publication, *The Journal of the Arkansas Medical Society*. 3. Frequency of issue, Monthly. 4. Location of known office of publication (Street, city, county, state, zip code), 114 E. Second Street, Little Rock, Arkansas 72203. Pulaski County. 5. Location of the headquarters or general business offices of the publishers (Not printers), 218 Kelley Building, Post Office Box 1208, Fort Smith, Arkansas 72901. 6. Names and addresses of publisher, editor, and managing editor, Publisher (Name and address), Arkansas Medical Society, 218 Kelley Building, P.O. Box 1208, Fort Smith, Ark. 72901; Editor (Name and address), Alfred Kahn, Jr., M.D., 1300 West Sixth Street, Little Rock, Arkansas; Managing Editor (Name and address), Mr. Paul C. Schaefer, 218 Kelley Building, P.O. Box 1208, Fort Smith, Arkansas 72901. 7. Owner (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding 1 percent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a partnership or other unincorporated firm, its name and address, as well as that of each individual must be given.) Name, Arkansas Medical Society (non-profit organization, incorporated); address, 218 Kelley Building, P.O. Box 1208, Fort Smith, Ark. 8. Known Bondholders, Mortgagees, and other Security Holders owning or holding 1 percent or more of total amount of bonds, mortgages or other securities (If there are none, so state.) None. 9. Paragraphs 7 and 8 include, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, also the statements in the two paragraphs show the affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner. Names and addresses of individuals who are stockholders of a corporation which itself is a stockholder or holder of bonds, mortgages or other securities of the publishing corporation have been included in paragraphs 7 and 8 when the interests of such individuals are equivalent to 1 percent or more of the total amount of the stock or securities of the publishing corporation. 10. Extent and nature of circulation. A. Total No. Copies Printed (net press run) average No. copies each issue during preceding 12 months, 2,050; single issue nearest to filing date, 2,100. B. Paid Circulation. 1. Sales through dealers and carriers, street vendors and counter sales, 0. 2. Mail subscriptions, average No. copies each issue during preceding 12 months, 1,394; single issue nearest to filing date, 1,422. C. Total paid circulation, average No. copies each issue during preceding 12 month, 1,394; single issue nearest to filing date, 1,422. D. Free distribution (including samples) by mail, carrier or other means, average No. copies each issue during preceding 12 months, 578; single issue nearest to filing date, 578. E. Total distribution (Sum of C and D), average No. copies each issue during preceding 12 months, 1,972; single issue nearest to filing date, 2,000. F. Office use, left-over, unaccounted, spoiled after printing, average No. copies each issue during preceding 12 months, 78; single issue nearest to filing date, 100. G. Total (Sum of E & F—should equal net press run shown in A), average No. copies each issue during preceding 12 months, 2,050; single issue nearest to filing date, 2,100. I certify that the statements made by me above are correct and complete. (Signature of editor, publisher, business manager, or owner)—Mr. Paul C. Schaefer, Business Manager.

# Marriage Counseling as a Responsibility of the Physician

Raymond W. Waggoner, M.D., Sc.D.\*

Physicians should be concerned about and accept as a challenge the high incidence of marital disorders. The problem is highlighted by some comparative figures. For example, in 1962 there were 1,577,360 marriages and 413,000 divorces. There were at least 250,000 unwed mothers last year, mostly teenagers and there were 300,000 or more "criminal" abortions. Although these figures are significant, they represent only a part of the problem. There is no way of determining the number of continued unhappy marriages. Many of these failures could be prevented by a well-planned discussion with the couple at the time of the premarital examination and another important proportion could be avoided if the physician to whom the patients go would take the time and knew how to give adequate counseling concerning marriage problems. All too often the physicians in the premarital examination do only what the law requires. Yet this is a wonderful opportunity to do away with many of the fears that tend to occur in this period. Many young people, especially women, are afraid to ask questions which may show ignorance. Embarrassment and shyness may prevent proper communication unless the physician is alert to the need for advice and reassurance. The complete premarital examination should include a careful history with special reference to the level of the patient's knowledge as well as a complete physical examination if possible with recommendation for treatment of any abnormality of the genitalia. Many experienced physicians feel that it is wise to suggest a return visit for counseling with both partners. This certainly can best be done *after* the premarital pelvic examination which in itself is often the source of much anxiety.

Actually individuals with serious marital problems rarely talk about them to the physician, but are more likely to complain of some kind of physical difficulty or symptoms. If one is alert to this possibility and uses a good approach, then the patient will frequently talk quite freely about the problem. Young people who come to the physician for the premarital examination are often much less knowledgeable about interper-

sonal relationships, particularly sexual relationship, than is generally believed. For example, one young man who was a top-flight law school student assumed that intercourse occurred only in dog fashion. On the other hand, much of lay literature is replete with very vivid and detailed descriptions of various kinds of sexual activity.

One of the most significant problems is that of communication, both between husband and wife and between patient and physician. On the other hand, if one is not aware of underlying factors, then difficulties can arise from supposed good communication. I recall one couple about whom this subject had been discussed in detail and later the wife told me how pleased she was that she and her husband were now able to communicate satisfactorily with each other. "As a matter of fact," she said, "if I feel too tired for sexual relationship, I don't hesitate to tell my husband, and if he likewise is not in the mood, then he doesn't hesitate to tell me." This sounded somewhat odd and on query, it appeared that each was using this so-called communication as a mechanism to get even with the other. On the other hand, silence may be a misunderstood or misinterpreted kind of communication. It may be an expression of hostility or aggression, or just plain disinterest.

It is vitally important for the physician to be able to listen attentively, to sort and sift the data, and to ask appropriate questions. In the course of such discussion, it is necessary to tactfully avoid the tendency of the patient to talk all around the problem, to say little. The physician should carefully avoid a tendency to blame either spouse. It is particularly important also that the physician not be aware of any indication of embarrassment on the part of the physician in the discussion. This, of course, particularly refers to various aspects of the sexual act. The patient should not have any feeling that the physician is acting in the role of a judge such as referring to the ethical or moralistic aspect of the problem other than helping the patient to weigh both sides of the question.

Marital pathology may be primarily the result of a neurotic relationship on the part of one or both partners, or it may actually be an expression

\*Department of Psychiatry, University of Michigan Medical Center, Ann Arbor, Michigan.

of some kind of psychotic reaction. Not infrequently in the treatment of the neurosis or even psychosis of a patient, when improvement occurs, the spouse may develop symptoms, i.e. impotence and frigidity. As a matter of fact, the patient who first comes to the physician often is the more stable of the two and is reacting to the stress induced by the more serious illness of the spouse.

In dealing with patients' marital problems, it is usually wise to speak with each spouse alone briefly, and with the two together. This may be done by seeing each one individually at first, then the two together, or the two together and then each one individually. It is particularly important that the physician observe the interaction which occurs in the joint interview. Quite a different story may be told when the partners are together than the story told when they are seen individually.

It is the physician's or counselor's role to assist the patient to become aware of his pattern of distorted behavior, and by an understanding of it, he or she may be able to do something about it. An authoritative ready-made solution offered by the physician may very well do more harm than good. Oftentimes, for example, the spouse may be making childish demands without being aware of it. If the individual is confronted with this, it is likely to be denied; but when led to see what is occurring, then it is much more readily accepted and there is likely to be more cooperation in its correction.

A guiding principle for marital counseling is an appropriate and varied mixture of sympathy and empathy. This implies what I choose to call active listening. This means a good deal of attention to and personal interest in the patient but without significant emotional involvement of the physician. The patient comes with all sorts of feelings of insecurity, of helplessness, of rage, or distorted eroticism. These may be hidden by various kinds of personality defenses which prohibit free expression or by various kinds of somatic symptomatology. With all this, the patient may demand that he be told what is wrong. This may very well be a trap into which the unwary physician falls. Even though it is apparent what the problem may be, it is rare that the patient would be willing to accept it and if told, simply needs to find a reason to prove that the interpretation is wrong. Actually many marriages are pushed on

the downward path through bungling misinformation.

Marital problems require mutual understanding with the need for compromise on the part of both partners, thus if husband and wife have been raised in different cultural patterns and insist on their own sense of values, which may seriously clash with that of the spouse, then trouble is bound to occur. A similar problem occurs in reference to the in-law relationship where the parents of one or the other become involved in the marital discord and serve primarily to increase the problem based on the cultural values and attitudes of the relatives. It is obvious that such interference should be avoided where possible.

In the report of a study of 2,500 married people to learn of factors tending toward happiness or unhappiness, it is emphasized that those who report satisfaction can say (1) that we are good companions and have few conflicts, (2) we resolve our disagreements by mutual discussion, and acceptance, (3) we find little in marriage to complain about, (4) we would choose each other again, and (5) we consider our marriage happier than the average. On the other hand, those who considered themselves dissatisfied or unhappy in marriage said (1) the difference in what was expected and what they got from marriage was too great. Too many people expect marriage to be a state of perpetual satisfaction. (2) Many persons married as a result of a severe personality disorder and certainly no person should marry to solve a personality or life adjustment problem. (3) It is especially important to have some understanding of what sexual adjustment means. For example, it is a serious fallacy to believe that both husband and wife usually should have a mutual orgasm. Most wives feel that it is their right to have an orgasm, much more so now than wives of a generation ago. By the same token if the wife is unable to have an orgasm, then the husband tends to feel inadequate. (4) When talking to a husband or wife, if that person speaks of "I" instead of "we" in talking of mutual interests, it may very well portend some difficulty in the future.

This leads me to talk of partnership in marriage. There are many factors which are involved, such as home, income, business affairs, mutual pleasure-time interests, and dual parental responsibility. These factors require a considerable degree of adaptability and flexibility on the part of both spouses, and in our present culture, should

involve mutual concern about decision making, as for example, in solving family problems. The ability to appropriately resolve such problems depends to a very considerable extent on the emotional maturity of each spouse and the ability to establish mutual trust and confidence.

Of all the problems which may arise in the marital situation about which more has been said and less is known is that of sexual adjustment. There has been a marked change in the sexual mores in recent years, with the development of what has been described as the single standard and the freeing of the female from the restrictive inhibitions which were present in the Victorian Era. An example of this change was expressed to me by a college physician who told me that at a small but rather select coeducational institution, more than 50 per cent of the young women had acquired and were using some kind of contraceptive method before they had completed the sophomore year. Inevitably such activity results in a somewhat greater risk for the female. Since this change in mores has been relatively recent, there is apt to be either more of a sense of guilt or of an over reaction resulting in a kind of promiscuity. Of course, there is always the danger of pregnancy and of venereal disease. Dr. Lief has put it very nicely when he says, "This is, I think, an inevitable consequence of our Hollywood-Madison Avenue culture which over stimulates sexual appetites, yet surrounds sex with tantalizing mystery. The Victorian Era of repression produced guilt; the modern Era of sexual expression and performance evokes shame and humiliation."

It is vitally important for the physician to be alert to possible sexual problems in his patients, not only as a manifestation of marital discord, but also as a possible cause of physical symptoms. For example, I have one patient who had had a whole series of operative procedures, including hysterectomy during a period of several years when she had refused to have sexual relationship with her husband. This behavior was the result of a long term neurotic pattern, but even though she refused to have any sexual activity with her husband, she became very angry if he showed a trend toward going elsewhere for such satisfaction.

The physician should have more sexual information than the patient but oftentimes this is only partially true. Although the anatomy of the organs of reproduction are known, the psychological factors involved in sexual adjustment are

much less likely to be known to, or understood by, the physician. Sexual anxieties tend to make the medical interview difficult and when such anxiety is manifested to the patient, either through outward evidence of embarrassment or by giving short shrift to such discussion, then the patient's own embarrassment is exaggerated and communication breaks down.

It should be emphasized, however, that a good or a satisfactory sex life does not necessarily guarantee a happy marriage, nor does lack of satisfaction necessarily cause a marital breakdown. A progressively greater percentage of women, however, feel cheated if they do not have an orgasm associated with coitus, even though many women achieve a high degree of satisfaction without an orgasm. Sexual problems are almost inevitably symptoms of other difficulty, usually a manifestation of a neurosis of some sort. This fact is one which should be recognized particularly by the general practitioner, the urologist, and the gynecologist. When these manifestations are evidence of a severe emotional disturbance, then psychiatric help may be required. It also should be remembered that occasionally the idea of sinfulness or guilt associated with sexual experience actually may heighten sexual satisfaction. As for example, a young woman who was a patient of mine had premarital coitus with several men, with each of whom she had an orgasmic reaction. But after marriage when sexual activity became to her an appropriate activity, she was unable to have an orgasm.

The commonest sexual symptoms of marital difficulty are frigidity, impotence, a preference for masturbation to intercourse, a preference for some perversion, what has been described as hypersexuality by which is meant an inordinate demand for sexual activity, or the opposite, a lack of sexual interest.

In summary let me list some of the disturbances which result in marital friction. The basic problem may be that one spouse fails to consider the other's feelings, needs, values and goals, or acts in complete disregard of such values and goals. Specifically financial problems, in-law problems, personality differences, religious problems, difficulties with children, and sexual problems are the most common factors.

Treatment requires that the physician be constantly on the lookout for some such problem even though the patient may complain only of somatic

symptomatology. It is important (1) to be able to listen to the patient without evidence of embarrassment or uneasiness, (2) to ask tactful questions and particularly to realize that it is possible to get a great deal of information without direct questioning, (3) to make sure that spouses are able to communicate with each other, as for example observation of their interpersonal reaction in the joint interview, (4) to not make moral or ethical judgments, but rather to be a screen on which the marriage partners can project their problems. It is vitally important, of course, not to take sides or to give one spouse the feeling that he or she is being judged in comparison to the other. (5) To try to get the spouses to see and to determine the solutions for their problems. In

this way the physician can act as a kind of catalyst and ask appropriate questions during the joint interview, (6) to recognize that if the physician feels uncomfortable in a given situation or is not able to lead the individual to an appropriate solution, then this is the best indication of need for referral for expert help.

Finally does it appear that there is a desire for, and a likelihood of, a sufficient degree of collaboration between the marital partners to make possible the re-establishment of marital equilibrium. This will depend in part on the degree of emotional maturity and motivation of the persons involved (or the ability to achieve it) and in part on the prescience of the physician.



#### **Coronary-Care Unit in the Routine**

#### **Management of Acute Myocardial Infarction**

D. M. Lawrie et al (M. F. Oliver, Coronary Care Unit, Royal Infirmary, Edinburgh) *Lancet* 2:109-114 (July 15) 1967

A 6-bed coronary-care unit is described. As a result of the admission and discharge policy which is outlined, 624 patients were admitted to the unit from April 1966, to May 1967, and 400 had sustained an acute myocardial infarction. There were 70 deaths (55 in the unit, 15 in the wards after transfer) and a high proportion were due to causes such as shock, asystole, and severe cardiac failure. Ventricular fibrillation developed in 44 patients and 23 (52%) left hospital after successful resuscitation. Asystole developed in 10 patients and only 1 left the hospital. As a result of successful treatment of cardiac arrest the mortality was changed from 22% to 17.5%, a 20% reduction. A coronary-care unit can be expected to make the maximum impact on mortality from myocardial infarction if admission is restricted to patients whose symptoms began within the preceding 48 hours and to those who later develop serious arrhythmias while being treated elsewhere.

#### **Vaccinia Gangrenosa and 1-Methylisatin**

#### **3-Thiosemicarbazone (Methisazone)**

C. E. van Rooyen et al (5800 University Ave, Halifax, North Saskatchewan) *Canad Med Assoc J* 97:160-165 (July 22) 1967

A case of vaccinia gangrenosa (VG) treated with methisazone is reported. The patient received 54.5 gm of methisazone over 16 days. Laboratory tests showed that no circulating neutralizing antibody to vaccinia virus was found, the interferon-producing capacity of leukocytes in VG was diminished as compared with normal controls, and the phytohemagglutinin transformation effect on leukocytes showed reduced activity. Postmortem examination revealed a minute spleen weighing 25 gm with generalized lymphoid depletion in lymph nodes. Lymphoreticular depletion coupled with fibroelastic tissue proliferation in the spleen may be associated with defective immunologic recognition at both the humoral and cellular levels. This case illustrates one of the unforeseen hazards entailed in the procedure of repeated smallpox vaccination as a prophylactic against recurrent herpes simplex.



STUDIES FROM  
THE UNIVERSITY OF ARKANSAS MEDICAL CENTER  
THE DEPARTMENT OF

## OBSTETRICS AND GYNECOLOGY

WILLIS E. BROWN, M.D., Professor, and Chairman  
STACY R. STEPHENS, M.D., EDITOR

### Pregnancy in the Adolescent Female

John P. Cirlin, M.D.\*

In the last ten years, this country has experienced a marked increase in its teen-age population. With this addition has come an equally large increase in the number of pregnancies in the very young. The reason for this phenomenon cannot be explained solely on the increased number of the young. One author<sup>13</sup> points out that in Germany and India this age group is as active sexually as its American counterpart, but the incidence of pregnancy at an early age is only a fraction of the American number. The enhanced fertility of the American teen-ager is attributed to better nutrition resulting in earlier menarche. The average first ovulation is presently at age 13 as compared to 17 in the past. Tanner<sup>12</sup> states that those who menstruate early also mature early in other respects.

Social and cultural problems also greatly influence the rising number of teen-age pregnancies, but these are too numerous and complex to discuss at this writing.

The problem then is to examine a segment of "teen-age" obstetrical practice and evaluate the questions that exist in its management. Simmons<sup>10</sup> and Israel<sup>7</sup> have reviewed large series of teen-age pregnancies by means of computers. They agree that obstetrical performance in the young expectant mother varies from the more adult and that certain problems must be expected. A review of their studies leaves no doubt that the pregnant teen-ager is worthy of special evaluation, but that her obstetrical management is not a serious matter.

#### HISTORICAL BACKGROUND

The first author in the literature to call attention to the very young mother was Harris<sup>5</sup> in 1922 in the Johns Hopkins Hospital Bulletin. He felt that mothers 16 years of age and under performed quite well when judged according to the obstetrical judgment of that era. The young had shorter labors, the same percentage of prematurity, and decreased or equal fetal mortality. He felt that the young mother's pelvis was equal in size to the older patient, but the colored had a 50 per cent increase in pelvic contractures.

Bromberg<sup>3</sup> in 1942, reported on a group of primigravidae ages 14 to 16 years. Along with an increase in toxemia and prolonged labor, he also found an increase in fetal mortality. He had a very low operative rate and concluded his review with the opinion that this age group presented no real problem and that treatment should be conservative. In reviewing two hundred patients 17 years old or under, Schmitz<sup>9</sup> seemed to agree with Bromberg. His series received adequate antenatal care and had very few obstetrical problems.

In 1950, Marchetti reviewed six hundred and thirty-four obstetrical patients between the ages of 12 and 16.<sup>8</sup> This series was 99 per cent Negro. Only 15 per cent were married, but he felt that they received good to adequate prenatal care. One-third of these patients had complications involving their antepartum course. Nineteen point seven per cent had pre-eclampsia, and 1.1 per cent had eclampsia. Both complications were higher than in older clinic patients. Operative forceps were rare and the cesarean section rate was only 0.6 per cent. He noted an increased pre-

\*From the Department of Obstetrics and Gynecology, University of Arkansas Medical Center, Little Rock.

maturity but decreased fetal mortality. No post-partum complications were present. Marchetti emphasized the importance of the antepartum course with its multiple social and psychological needs, feeling that the high toxemia rate might be explained on the basis of endocrine immaturity, the emotional state of the young, and the high incidence of Negroes in the series. He then concluded that from a purely obstetrical point of view, 16 years of age or less, is the optimum time for birth of the first baby. In that same year Dodge and Brown<sup>4</sup> came to quite a different conclusion in a series of primigravidae of all ages. They divided the young into the age groups, 12 to 14, and 15 to 17 years and found that the younger patients had a multitude of problems. Fifteen per cent had prolonged labor, 14 per cent had pre-eclampsia, and 3.3 per cent were eclamptic. Also noted were high perinatal mortality and post-partum morbidity rates. There was no increase in contracted pelvis but the prematurity rate was increased and was essentially the same as for all primigravidae. They concluded that, although their series was composed of patients with little antenatal care, ages 17 to 21 might be the most opportune time for delivery, while under the age of 15 many more complications should be anticipated.

Since 1950, numerous articles have been written about the adolescent mother. Simmons<sup>10,11</sup> reviewed a large series of teen-age pregnancies cared for by the medical services of the United States Navy. This group represented an almost perfect cross-sampling of the general population. He found in the very young a definite increase in toxemia, prematurity, and prolonged labor and felt that the biologic immaturity plus their dietary indiscretions were responsible to a large degree for both the toxemia and prematurity. He also felt that the low cesarean section rates in the young were due to a conservatism which should perhaps be re-evaluated.

Israel<sup>7</sup> found only an increase in pre-eclampsia and anemia in the young. He did point out quite vividly that various studies were not comparable because any series containing a large number of colored and those of low socio-economic class will have a high incidence of toxemia, anemia, prematurity, and perinatal mortality. He felt that these factors influenced the course of the pregnancy much more than age. Hassan<sup>6</sup> in a study of young white mothers found that, in those under age 16,

there were complications of increased toxemia, prematurity, perinatal mortality, and morbidity. He recognized the difference in race and socio-economic class but believed pregnancy in patients 15 years and under presented a definite hazard.

The central theme of all discussion today seems to be that the teenager is not really a problem of obstetrical performance, but that she constitutes a problem of adequate care in the antenatal period. She may have biologic immaturity, but if all factors are favorable, her age will not be a detriment.

## MATERIAL

This study consists of a review of one hundred and ninety-three patients under the age of 16 who delivered at the University of Arkansas Medical Center between July 1, 1965 and December 31, 1966. This number does not represent all of the patients in this age group who delivered during this period. Several charts indicated that the patient's age was probably greater than recorded, and some charts could not be located for analysis.

A control group was selected from primigravidae ages 18 to 20 years. This age group was chosen since it seems to be a consensus of opinion that this is the optimum time for delivery. One hundred and ninety-seven patients who delivered in the above period were selected at random.

Both groups were evaluated for:

Race, marital status, positive serology, adequacy of prenatal care, toxemia, anemia, medical complication, false labor, premature rupture of membranes, precipitate and prolonged labor, abnormal presentation, cesarean section rate, infant prematurity, perinatal mortality, and postpartum complications.

## RESULTS

The one hundred and ninety-three patients studied during the 18 month period represented 5.8 per cent of total deliveries. Only seventeen patients were 12-13 years old. The one hundred and ninety-seven control patients represented 6.0 per cent of total deliveries.

In the control group all patients were primigravidae but fourteen patients in the study group were multigravidae. It is interesting to note that although most authors state that the young multigravida have few problems eight of our fourteen had complications. Two of our patients had repeat cesarean sections, one had Duhrssen's incisions for breech delivery, two had pyelonephritis with premature deliveries, one developed endometritis

postpartum, one delivered a 3 lb. 5 oz. premature, Apgar 3 infant, and one patient had three complete abortions before the age of 16. This latter patient was felt to have an incompetent cervical os, but her mother would not consent to surgical repair. Three of our study patients were not delivered in this hospital. One was admitted with hyperemesis gravidarum, one in false labor, and one 14 year old was anemic and had a conization of her cervix which revealed atypia.

TABLE I  
COMPARISON OF STUDY AND  
CONTROL GROUPS

	Study Group Age 12-15 Years	Control Group Age 18-20 Years
	Percent	Percent
Negro	90.7	75.8
Married	12.6	37.4
Serology Positive	0.5	0.5
Anemia	28.5	26.8
Adequate Antepartum Care	34.7	43.4
Toxemia	19.6	9.6
Medical Complications	29.0	25.0
Precipitate Labor	1.5	2.0
Prolonged Labor	8.2	6.1
False Labor	12.4	9.0
Premature Rupture Membranes	9.3	2.0
Abnormal Presentation	5.2	3.5
Cesarean Section	7.9	5.0
Infant Less Than 5 lbs.	15.2	8.0
Perinatal Mortality	7.8	4.0
Post Partum Complications	22.6	11.0

Table I compares the study with the control group.

Both groups were similar with regard to race. As expected, more of the older females were married. Surprisingly, 12.6 per cent of the younger girls were also married. Both groups had less than one per cent positive serology and about 30 per cent anemia, e.g. hemoglobin less than 10.6 grams.

Although 70 per cent of the study and 84 per cent of the control patients were registered in our clinic, only half that number in each group were thought to have received adequate prenatal care, e.g. at least five antepartum visits.

With regard to toxemia of pregnancy the study group yielded thirty patients with mild pre-eclampsia, five patients with severe pre-eclampsia and three patients with eclampsia; an overall incidence of 19.6 per cent. The control group showed eighteen pre-eclamptics and one eclamptic, an incidence of 9.6 per cent.

A wide variety of medical complications were encountered. These ranged from diabetes mellitus to osteomyelitis, scleroderma, and carcinoid tumor of the appendix. The major complication in each group was pyelonephritis which accounted

for one-fourth of the study group complications and one-eighth of the control group problems.

Problems of labor and delivery were also numerous. Both groups were similar in incidences of precipitate, prolonged, and false labor. Premature rupture of the membranes occurred in 9.3 per cent and was four times greater in the study group. No abruptio or placenta previas were found in either group. Pitocin stimulation of labor was necessary in 7.5 per cent of both groups.

There were seven breech presentations in each group and a total of three sets of twins. The study group had two transverse lies and one face presentation, the remainder were vertex presentations.

Method of delivery was listed for one hundred and ninety-one study and two hundred control infants. Cesarean section rates were 7.9 per cent and 5.0 per cent for the study and control groups. Corresponding rates for mid-forceps delivery were 15 per cent and 11 per cent. (Table II)

TABLE II  
METHOD OF DELIVERY

	Study Group Percent	Control Group Percent
Spontaneous	15	9
Low Forceps	59	73
Mid-Forceps	15	11
Breech Extraction	3	2
Cesarean Section	8	5

There were essentially no placental anomalies. Each group had one infarcted placenta. While the study group had three ruptured marginal sinuses, and the control group had one ruptured marginal sinus and one minor abruption. Five and one-half per cent of the control group had postpartum hemorrhage. There were no recorded cases of hemorrhage in the study group.

The study group had 15.5 per cent cervical and vaginal lacerations, while the control group had an incidence of only 10.5 per cent. No fetal anomalies were noted in the study group. Two infants had minor anomalies in the control group.

Postpartum morbidity was primarily composed of endometritis and pyelonephritis. Twenty-two per cent of the study group and 11 per cent of controls were found to have a complicated postpartum course.

Seventeen study babies weighed less than 5 pounds, and twelve weighed less than 3 pounds, a prematurity rate of 15.2 per cent compared to the total prematurity rate of 8 per cent in the con-

trol group. In the study group 21.4 per cent of the babies delivered had Apgar scores of less than 7. Only 14.5 per cent of the control patients fell into this category.

The perinatal death rate was 7.8 per cent in the study group and 4 per cent in the control group. There were an equal number of stillborns in each group (3 per cent).

### DISCUSSION

This data represents the obstetrical performance of two groups of young patients. The study group consists primarily of 15 year olds with an appreciable number of 14 year old mothers. The control group is largely 18 or 19 year primigravidas. It is of interest to note that at the University of Arkansas Medical Center probably 90 per cent of all primigravidas are 19 years of age or younger and that within this group the very young represent a sizable percentage. The lack of a significant number of pregnancies under the age of 14 probably reflects lack of ovulatory cycles and biological immaturity rather than adequate sexual exposure.

As previously noted, both groups have a large predominance of colored patients. In the control group, the Negro comprises 75 per cent of the population. This closely represents the racial distribution of the entire obstetrical service of the Medical Center. The study group is composed of 91 per cent Negroes. This is an important fact to keep in mind throughout the evaluation of the problems found in this paper. Israel<sup>7</sup> states that the young present no major obstetrical difference from the remainder of the population with the exception of pre-eclampsia and anemia, but he emphasizes the striking difference between the white and non-white groups. His non-white older patients had a higher prematurity, anemia, and perinatal mortality than the white teen-ager.

The purpose of this paper is not an attempt to categorically state that age *per se* is a detriment to obstetrical performance. However, age coupled with other parameters in the indigent population is a definite problem. The well-recognized fact that the colored become pregnant at an early age readily explains the difference in the population of the study groups, but a simple explanation of why the group is composed in the manner it is, does not reduce the problem that these patients present in obstetrical care.

The low number of married patients, once again, reflects upon the socio-economic and racial

make-up of the group as a whole. Most authors agree that the marital status of a mother is not significant in her obstetrical performance. However, to be sure it is another of the many factors which influences a patient's obstetrical performance.

It is of interest to note in passing that only one patient in each series had a positive test for syphilis. This is an indigent group of sexually active patients and it makes one wonder where the dramatic rise in venereal disease reported by the government is taking place. As far as could be determined, none of these patients had been treated prior to their serological testing.

Antenatal care seems to be the key to excellent obstetrical performance. In series such as Simmons<sup>10,11</sup> and Briggs, et al.,<sup>2</sup> patients had very few problems at any time in their gestation. These series had only a limited number of patients who received less than adequate care. But problems do exist for a large number of teen-age mothers, and what these problems are have not been completely agreed upon. Aznar and Bennett<sup>1</sup> emphasized that most young mothers do not receive adequate prenatal care and even when they do, they present certain problems in relation to prolonged labor, toxemia in pregnancy and prematurity.

Our patients, in general, did not receive adequate antenatal care. It is beyond the scope of this paper to discuss this problem but it should be accepted that lack of care greatly influenced the occurrence of some of their problems.

The Committee on Maternal Welfare has listed three factors which influence the rate of toxemia: race (an increase in the colored over the white); age (the younger the patient the higher the rate of toxemia); and antenatal care (the less care the greater the occurrence of toxemia).<sup>6</sup> Nearly all authors also now agree that marked weight gain is associated with an increase in toxemia.<sup>10</sup> With these facts in mind, one could predict the 18.1 per cent incidence of pre-eclampsia found in our study group and 1.5 per cent incidence of eclampsia. This is compared to the 9.1 per cent pre-eclampsia and the 0.5 per cent eclampsia rate in the control group. The overall incidence of toxemia on our obstetrical service is 9.6 per cent, which is some 3.5 per cent above the national average. It is of note that in the control group the incidence was the same as the service as a whole.

It is clinically demonstrable that the factors listed by the Committee on Maternal Welfare play

a significant role in the study group. There was twice as much toxemia as noted in the control group. Forty per cent of the pre-eclamptics had never been seen at this hospital prior to the onset of labor, and of the total number of toxemias, 69 per cent had received inadequate antenatal care. All eclamptics were seen for the first time convulsing. It is unknown how many of the toxemia patients had excessive weight gains, but of those who gained over 35 pounds, one-third had pre-eclampsia. In the control group only 13.3 per cent of the toxemias were non-registered and 40.6 per cent had inadequate care. Of those who gained over 35 pounds, one-fourth had pre-eclampsia. It would appear that since both groups were predominantly Negro and both had approximately the same number who gained weight excessively, the two important factors for the marked increase in toxemia of the study group were age and prenatal care. It seems impossible to determine which of the two supersedes the other. It is interesting that the control group had only 43.4 per cent adequate care and did not have a marked increase in pre-eclampsia. No attempt will be made to explain why all of these factors influence the incidence of toxemia. Our study does not support this. Our incidence of toxemia was the same for ages 13, 14, and 15 years. There were no incidences of hypertension among either group.

Anemia has been stated to be a problem in the young mother.<sup>7</sup> In this study no differences existed between groups. The high rate of anemias does not appear to be related to age but to the general health status of our patients. The presence of anemia could not be related to other complications. There was essentially no difference in the occurrence of medical complications in the study and control groups.

Many authors report few medical complications of the young. A 25-29 per cent incidence, including such problems as osteomyelitis, scleroderma, congenital heart disease, Milroy's disease, carcinoma of the appendix, sickle cell disease and malignant degeneration of a pseudocystadenoma of the ovary must reflect the fact that the University of Arkansas Medical Center is a referral Center for the rest of the state.

There was only a slight increase in the number of false labors in the study group, but the incidence of prematurely ruptured membranes was 9.3 per cent as compared to 2 per cent of the control patients. This may or may not once again

reflect poor antenatal care with a high incidence of cervical infection.

It is of interest that in neither group was there found a significant abruptio or placenta previa. This has been evident in other studies of the young, but there have been few comments as to why this phenomenon is true. Attributed causes for abruptio placenta are toxemia, hypertension, trauma, mechanical manipulation during labor, elevated venous pressure, and poor folate metabolism. If these are indeed significant causes of abruptio placenta, it would seem that a group with such high incidences of toxemia and anemia should certainly have abruptions. Age in this case must play a dramatic role. Our patients' care was certainly not good, and one could not say their physical condition was desirable. All that they had in their favor was their age and this must, in itself, be sufficient.

The labor of the young is considered excellent with the exception of the two ends of the spectrum. They supposedly have a tendency to increased precipitate and prolonged labor. There was no increase in precipitate labor in either of our groups. However, there was an increase in prolonged labor in both groups—6.1 per cent in the control group and 8.2 per cent in the study group. These figures could be corrected by not including those patients who were referred to the University of Arkansas Medical Center after 10 or more hours of labor and in those who had an epidural anesthesia with labor of 21 hours only. If this same policy were followed in the control group, and the twins and stillborns were dropped from those with labor over 20 hours, the percentage of prolonged labors in each group would be less than two. I believe that these exclusions are justified and that they seem to have little effect on the ability of the young to deliver promptly with adequate care and supervision. No differences existed in the types of presentation in both groups. There were several breeches and the remainder were vertex with the exception of two transverse lies and one face presentation in the study group. The latter three patients were referred to the University of Arkansas Medical Center in labor.

Cervical and vaginal lacerations were few and minor. There were no postpartum hemorrhages in the study group while 5.5 per cent of the control group lost over 500 cc. of blood. This seems to be the general finding in all studies and has

not been explained.

Postpartum morbidity was 11 per cent in the control group and 22 per cent in the study group. I believe that this once more reflects the lack of adequate care the majority of patients have received during their antenatal course. Once they are hospitalized, all patients were treated in a like manner during labor and postpartum.

Delivery methods were similar in all patients. Compared to our usual rate of mid-forceps deliveries (5.4 per cent) the control group had two times and the study group three times this rate. Our mid-forceps deliveries were somewhat higher than most authors but lower than the 19.1 per cent quoted for those under 15 years by Simmons.<sup>10</sup> Over 90 per cent of our patients had babies with Apgar scores greater than 7 and there were no maternal deaths. Eight per cent of study and 5 per cent of control patients were delivered by cesarean section. Our overall rate during this period was 6.4 per cent. Reviewing the patients that were delivered by cesarean section, four patients had prolonged labor. All were referred and arrived at the University of Arkansas Medical Center having been in labor from 20 to 69 hours. Two of these were transverse lies and both infants were lost. Two other sections were done for a breech and a face presentation. Other sections were for cephalopelvic disproportion with the exception of one done for failed induction after premature rupture of the membranes.

Of interest is the fact that of thirteen primagravidas presenting by the breech five of six in the study group and four of seven in the control group were delivered vaginally, an incidence of 69 per cent.

The study group showed 15.2 per cent prematurity and 7.8 per cent perinatal mortality. Similar figures for the control group were 8 and 4 per cent. The latter premature rate was slightly better than that of our service as a whole (9.5 per cent), and the perinatal mortality was approximately equal to that of our service.

Since we have a large number of mid-forceps and cesarean section deliveries, one must naturally wonder with what kind of patients we are dealing when our perinatal death rate is 7.8 per cent. Simmons<sup>10,11</sup> found that his patients under 15 years had a 19.1 per cent mid-forceps rate and 11.1 per cent prolonged labor rate. In both of these groups there was a marked increase in perinatal mortality. With these facts in mind, he asked for

more liberalization of the young patient's obstetrical care by use of early cesarean section when indicated. I believe that at the University of Arkansas Medical Center the young patient has never been allowed to labor for prolonged periods of time because of her age. Cesarean sections are done when indicated. Unfortunately many patients are referred to us after serious mismanagement and our statistics reveal the mistakes of patient and physician. I believe that one example of this has already been stated. We would have a very low percentage of prolonged labor if we eliminated the patients who were referred after 10 or more hours of labor. Examining the patients in our study groups who had a mid-forceps delivery, it was found that one patient referred after 30 hours of labor, delivered a viable infant by use of mid-forceps. Only one other patient had a prolonged labor in this group, she was in labor 23 hours. The infant at birth had an Apgar score of 7.

Why then did our study group have such a high perinatal death rate? Simmons again suggests an answer from his own series. He found that there was a marked increase in immature deliveries in the very young, and that these infants were the ones with high perinatal loss. This is quite evident in our group. The reason for the high incidence of immature births in the young mother is not clear. It has been postulated that this may be due to immaturity of the mother's biological reproductive system. It is also felt that to be directly related to the amount of antenatal care received by the patient. The control group had only three infants less than 3 pounds, while the study group had twelve patients in this category. Both groups had a 3 per cent stillborn rate and both had essentially the same number of infants under 5 pounds but greater than 3 pounds. Therefore, it is seen that the high perinatal death rate was due to a marked increase in the number of immature births and was totally unrelated to the patient's labor or delivery. If this group of patients had not been treated in the same manner as any primigravida in labor, the perinatal death rate may have been twice that which actually occurred.

It is also of interest that our hospital cesarean section rate in primigravidas is only slightly over 3 per cent. This is in contrast to the 7.3 per cent and 5 per cent cesarean section rate in the primigravidas in the two study groups. It would seem that the young are more often sectioned at the

University of Arkansas Medical Center. In this hospital, we feel that all cesarean sections have been done for obstetrical reasons. Therefore, it seems evident that a larger number of young mothers require cesarean section for delivery of a healthy infant than has been reported in the literature.

Before leaving the subject, it should be noted that our control group's rate of prematurity was well within the national average. The study group's rate was almost double this figure. This might be expected in young mothers who are predominantly Negro. These figures would have been higher if the usual value of 2500 grams had been selected for the beginning of prematurity. The reason that the lower value of 5 pounds was chosen is that the hospital nursery uses this weight in its care of the newborn. Their success in the care of these patients seems to justify the selection of the lower value.

It would be desirable if one could remove all factors except age in this study and therefore arrive at conclusions of obstetrical performance which were dependent upon age alone. As has been stated previously, this is not possible since forces such as race and socio-economic class effect the situation so dramatically. We propose the establishment of an obstetrical entity which not only recognizes the adolescent mother, but includes the fact that when she is generally poor and predominantly colored, she is not only different from the more affluent of her own age, but also different from her older sister whose environment is that of her own. We must recognize that this patient exists, that she does present a problem in care and delivery, that some means must be found to educate the patient and her family, and that she needs to be cared for at a much earlier date in her pregnancy than the onset of labor. I do not know what changes can feasibly be made in institutions which care for these patients in order to enable them to better care for the young, but truly adequate antenatal care seems to be the only solution to the problems found in the study patients of this paper. Toxemia, anemia, prematurity, perinatal death, and postpartum morbidity have all been improved dramatically with antenatal care. This is not to discredit the role that age plays in the occurrence of the above mentioned symptoms but age is a factor that one cannot change while antenatal care does seem to offer some hope in improvement.

At the University of Arkansas Medical Center there will continue to be referrals of patients who have already become compromised, and little can be offered except delivery and maximum care from that point forward. If physicians who care for these patients could be alerted to the potential danger that the young indigent mother represents, they may become more alert to her problems and with the first evidence of trouble refer her to a center equipped for complete obstetrical care. The poor will be with us always. It then becomes the responsibility of those who care for them to upgrade their care wherever possible.

### CONCLUSIONS

In the study of pregnant adolescent females 15 years of age and younger, it is seen that the majority are colored, low socio-economic class, and unmarried and are the recipients of little or no antenatal care. The control group composed of 18 to 20 year old primigravidas differs primarily in age alone. There are fewer colored in the control group and they did receive somewhat more antenatal care. The study group had twice the occurrence of pre-eclampsia and three times the occurrence of eclampsia. The majority of these patients had inadequate care. No critical age of occurrence was found. A four-fold increase in premature rupture of the membranes was discovered in the study group. A high incidence of prolonged labor was reported but this reflected more the nature of the University of Arkansas Medical Center as a referral center than the care of the patient while in labor.

Increased mid-forceps and cesarean section rates were also found in the study group. This reflected to some extent that the University of Arkansas Medical Center is a referral Center, but is also demonstrated that when the young patient is delivered by the same criteria as her older sister, her smaller pelvis necessitates the liberal use of mid-forceps and cesarean section. These patients did not add appreciably to the perinatal death rate. The premature rate, and the perinatal death rate were doubled in the study group. Both increases can be explained by the marked increase in immature deliveries.

Postpartum morbidity was doubled in the study group. Of the fourteen multigravidas in the study group eight had complications of the studied pregnancy. Sixty-nine per cent of primagravida patients presenting by the breech were delivered vaginally.

BIBLIOGRAPHY

1. Aznar, R. and Bennett, A. E.: Pregnancy in the Adolescent Girl. *Am. J. Obstet. & Gynec.* 81:934, 1961.
2. Briggs, R. M., Herren R. R. and Thompson, W. B., Sr.: Pregnancy in the Young Adolescent. *Am. J. Obstet. & Gynec.* 84:436, 1962.
3. Bromberg, Y. M. and Brzezinski, A.: On Labor in Young and Old Primiparae. *J. Obstet. & Gynec. Brit. Emp.* 49:672, 1942.
4. Dodge, E. F. and Brown, W. E.: Effect of Age Upon Obstetric Complications in the Primigravida. *So. Med. J.* 43:1060, 1950.
5. Harris, J. W.: Pregnancy and Labor in Young Primiparae. *Bull. Johns Hopkins Hosp.* 23:12, 1922.
6. Hassan, A. M. and Falls, F. H.: The Young Primipara—A Clinical Study. *Am. J. Obstet. & Gynec.* 88:256, 1964.
7. Israel, S. L. and Wontersz, T. B.: Teenage Obstetrics: A Cooperative Study. *Am. J. Obstet. & Gynec.* 85:659, 1963.
8. Marchetti, A. A. and Menaker, S. S.: Pregnancy in Adolescence. *Am. J. Obstet. & Gynec.* 59:1013, 1950.
9. Schmitz, H. E. and Towne, J. E.: Adolescent Primigravida. *Surg., Gynec., and Obstet.* 84:962, 1947.
10. Simmons, J. P. and McGlamory, S. C.: Teen-age Pregnancies. *Obstet. & Gynec.* 16:31, 1960.
11. Simmons, J. P.: Teen-age Pregnancy and Its Special Implications. *Obstet. & Gynec.* 26:77, 1965.
12. Tanner, J. M.: The Development of the Female Reproductive System during Adolescence. *Clin. Obstet. & Gynec.* 3:135, 1960.
13. Stearn, R. H.: The Adolescent Primigravida. *Lancet*, 2:1083, 1963.



**Factors Influencing Limb Survival After Femoropopliteal Reconstruction**

N. P. Couch et al (721 Huntington Ave, Boston)  
*Arch Surg* 95:163-169 (Aug) 1967

Ninety-six patients are presented in whom femoropopliteal arterial reconstruction was done. Followup results for at least one year were complete for 92 patients and 96 limbs. There were 96 primary reconstructions and 10 secondary reconstructions. The primary reconstructions included 29 vein-bypass grafts, 34 thromboendarterectomies, 31 plastic grafts, and two homografts. The operative mortality for the entire group was 8%; five of the eight deaths were directly due to atherosclerotic occlusion. Nineteen patients with acute thrombosis had a mortality of 26% (5 patients). The overall limb survival rate was 68%. Limb survival was 87% in limbs with grade 2 and 3 symptoms, 50% in limbs with acute thrombosis, and 36% in diabetics. Of the 30 amputations, 20 were above-knee, and ten were below-knee. The overall limb survival rate was affected adversely by several factors, including the high proportion of severely ischemic limbs (77%), the inclusion of many patients in the high-morbidity groups (diabetes, acute thrombosis, advanced age), and the high proportion of thromboendarterectomies and plastic grafts.

**Surgical Treatment of Mycotic Infections of the Lung**

J. A. S. Wilson and D. D. Munro (3650 St Urbain St, Montreal) *Canad Med Assoc J* 97:166-173 (July 22) 1967

A group of patients with pulmonary mycotic infections, including nocardiosis, cryptococcosis, aspergillosis, coccidioidomycosis and histoplasmosis was treated by surgery. The diagnosis was established either before operation by culture of the fungus, or following operation by identification of the fungus on special tissue stains or by culture from the operative specimen. Operation was carried out either as a diagnostic procedure or a definitive form of treatment. In the patients with cryptococcosis and certain of the cases of histoplasmosis, amphotericin B was given pre- and postoperatively; however, it was found to be highly toxic and its use was restricted to patients with the more severe forms of infection. Patients with histoplasmosis constituted the largest group. Those requiring operation presented either as histoplasomas, lymphadenopathy with compression of adjacent structures, or as chronic cavitary lesions. The results of surgery were gratifying. There were no complications related to the mycotic infection and there were no postoperative deaths.

## WHAT IS YOUR DIAGNOSIS?

Prepared by the  
Department of Radiology, University of Arkansas  
School of Medicine, Little Rock

ANSWER ON PAGE 233



### HISTORY:

This 10-month-old male was apparently well until 2 weeks of age when he was noted to become cyanotic on crying. He had subsequently had constant mild cyanosis which became more marked on exertion. He had a Grade III, harsh, systolic murmur over the entire precordium heard loudest in 3rd and 4th left intercostal spaces at the left sternal border.

## ELECTROCARDIOGRAM



## OF THE MONTH

• • • • • • • • • • • • • • • • • • • AGE: 42 SEX: F BUILD: Slender BLOOD PRESSURE: 110/84

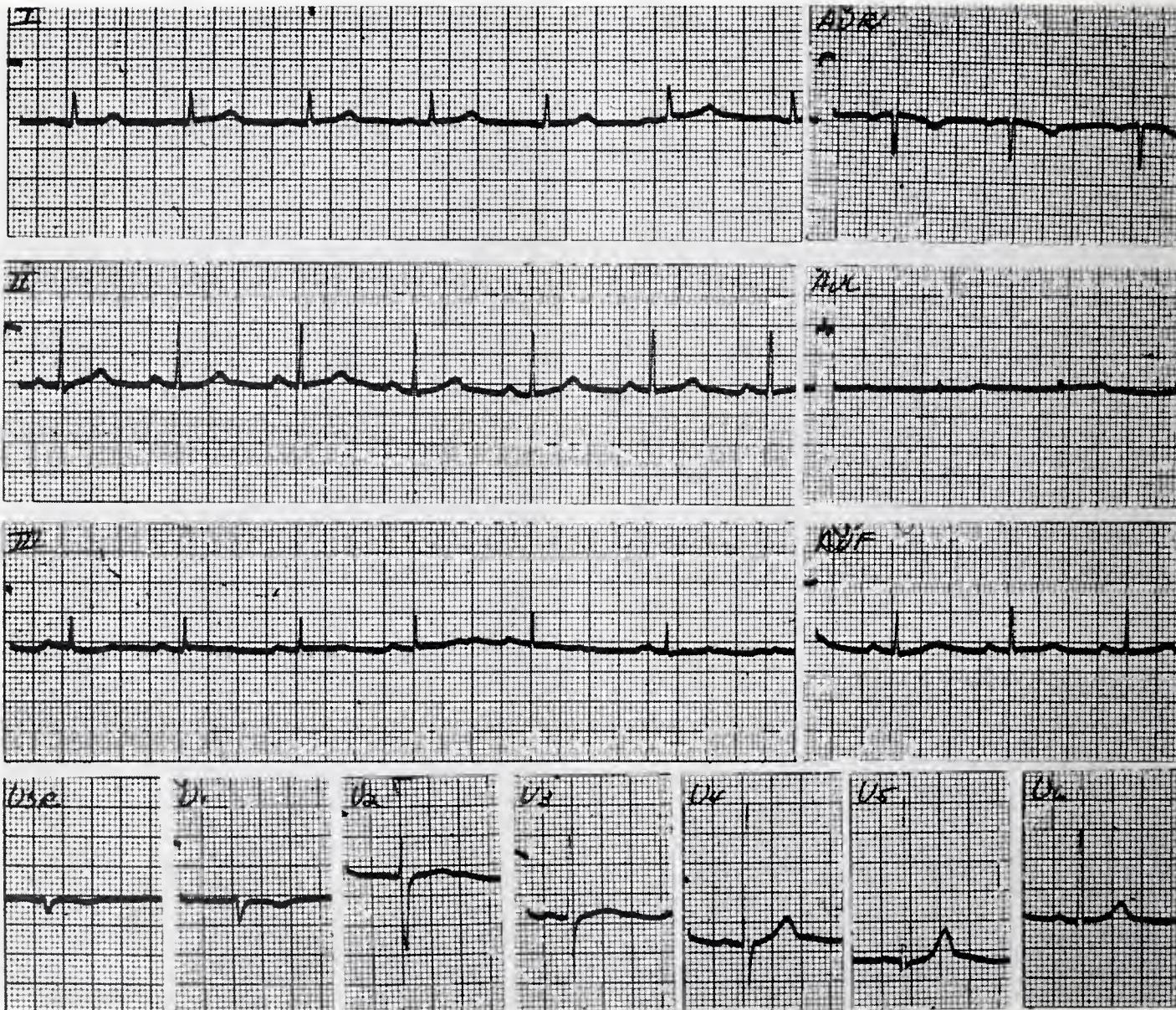
CARDIAC DIAGNOSIS: Systolic apical murmur.

OTHER DIAGNOSES: Carcinoma of esophagus.

MEDICATION: None.

HISTORY: No history of cardiac disease nor symptoms.

ANSWER ON PAGE 233



The Department of Medicine, University of Arkansas Medical Center  
James S. Taylor, M.D., Professor of Medicine

PH

## PUBLIC HEALTH AT A GLANCE

### The Arkansas Meat Inspection Program

The Arkansas Meat and Meat Products Inspection Act, Act 320, passed by the 1967 session of the Arkansas Legislature, created a greatly needed tool for improving the slaughterhouses, packing plants, and frozen food lockers in the State of Arkansas. It places the responsibility for implementing the Meat and Meat Products Inspection Act upon the State Department of Health. The act became effective July 1, 1967.

Harvie R. Ellis, D.V.M., Director of the Division of Veterinary Public Health of the Arkansas State Department of Health, has been appointed to direct the Meat Inspection Program. Additional technical and professional personnel are to be employed as the program develops. Dr. Ellis plans to work closely with the executive board of the Arkansas Meat Packers Association, the Federal Meat Inspection Program, and the existing Municipal Meat Inspection Programs.

The act provides for the inspection of livestock slaughtered, carcasses and parts, and meat food products; condemnation and destruction of carcasses and other items unfit for food; regulations for the sanitation of the establishments; regula-

tion of advertising, marking, and labeling of the carcasses and parts, and also the meat food products. In addition, the act provides for licensing, record keeping, penalties and violations, issuance of regulations, certain exemptions, denial of inspection, and the cost of inspection.

The Arkansas Meat Inspection Program is to be established as a pilot program in the early phases with the plan for a full operating program within two years. A full operating program will include about 45 lay meat inspectors with supervision by district veterinarians. The accompanying maps show the wide distribution of slaughterhouses, meat packing plants, and frozen food locker plants in Arkansas. At the present time only a few of the total 186 slaughterhouses and meat packing plants have ante-mortem and post-mortem inspection along with sanitary inspection, and those have Municipal and Federal inspection. Frozen food locker plants are presently inspected for general sanitation practices only. The objective of the Arkansas Meat and Meat Products Inspection Law is to provide clean wholesome food for the consumer.



## RESOLUTIONS



WHEREAS, the Members of the Pulaski County Medical Society, in an effort to express themselves on the loss of their colleague, Benjamin W. Drompp, M.D., note with sincere sorrow his passing from this life; and

WHEREAS, Dr. Drompp, in the five short years he had been a member of this Society, had contributed his time and talents to the betterment of the Society, having served in its programs of community service and as a member of the Program Committee at the time of his death; and

WHEREAS, Dr. Drompp was respected by physicians from throughout the state in the manner in which he served as Professor and Head of the Division of Orthopedic Surgery at the University of Arkansas Medical Center;

### BE IT THEREFORE RESOLVED:

THAT, this resolution be made a part of the permanent records of this Society; and

THAT, a copy of this resolution be forwarded to the family of Dr. Drompp as an expression of our heartfelt sympathy; and

THAT, a copy of this resolution be forwarded to the Journal of the Arkansas Medical Society for publication.

By Action of the Memorials Committee  
T. Duel Brown, M.D., Chairman  
John McCollough Smith, M.D.  
Lucas Byrd, M.D.

Approved by Executive Committee  
September 20, 1967

---

WHEREAS, the recent death of Dr. Paul L. Mahoney is noted with sincere sorrow by his colleagues, and

WHEREAS, Dr. Mahoney's contribution to the medical profession was outstanding in that he served as President of this Society; as an officer in the Arkansas Medical Society; as President of the American Academy of Facial Plastic and Reconstructive Surgery; and in other positions of leadership in medical organizations; and

WHEREAS, he held an enviable position of respect not only with his fellow physicians, but with his patients and with the members of this community.

### BE IT THEREFORE RESOLVED:

THAT, the Pulaski County Medical Society express its sympathy to the family of Dr. Mahoney; and

THAT, a copy of this resolution be made a part of the permanent records of this Society; and

THAT, a copy of this resolution be sent to Dr. Mahoney's family; and

THAT, a copy of this resolution be forwarded to the Journal of the Arkansas Medical Society for publication.

By Action of the Memorials Committee  
T. Duel Brown, M.D., Chairman  
John McCollough Smith, M.D.  
Lucas Byrd, M.D.

Approved by the Executive Committee  
August 16, 1967



### Hemodynamic Effects of Propranolol in Patients With Fallot's Tetralogy

G. R. Cumming and W. Carr (Children's Hosp of Winnipeg, Winnipeg, Canada) *Amer Heart J* 74:29-36 (July) 1967

Thirteen patients with tetralogy of Fallot were given propranolol in order to study the effects of beta-adrenergic inhibition. The percentage of right-to-left shunting decreased in all patients. The most marked change occurred in one patient studied during an attack of cyanosis. Additional evidence indicating relaxation of the right ventricular outflow tract after beta-adrenergic inhibition was obtained. A reduction in the pulmonary artery-to-right-ventricle gradient occurred in two patients, and angiographic evidence suggested an increase in the caliber of the right ventricular outflow tract in one patient. Although long-term study is required, changes produced by propranolol may prove to be of value in the management of the spells of cyanosis that occur in infants with Fallot's tetralogy. Long-term clinical results to date have been disappointing.



## EDITORIAL

# Wurtman's Review of Catecholamines

Alfred Kahn, Jr., M.D.

A very significant review series on catecholamines has been authored by R. J. Wurtman and published in The New England Journal of Medicine on successive weeks beginning September 16, 1965 (Vol. 273, page 637). The ordering of catecholamine excretion as a test for pheochromocytoma is almost perfunctory in many general hospitals around the country, and yet the medical profession is comparatively uninformed about some areas of its metabolism—despite a historic interest since the work of Cannon and others who even argued the merits of using the terminology of epinephrine or adrenalin.

Wurtman points out that the two compounds which fall into this category are epinephrine and nor-epinephrine, which act as a neurohumor and hormone respectfully. They are made in the nervous system and adrenal medulla. They are released into the nervous system and act on distant organs. The catecholamines are synthesized from tyrosine, and this has been proved by following the metabolism of radioactive tyrosine; this occurs in the nerve endings in many organs including the heart, for example; the precursor substance is dopamine and the various steps to epinephrine and nor-epinephrine are catalyzed by various enzymes.

The catecholamines are now known to be stored in special granules in adrenergic nerves and chromaffin cells. The nor-epinephrine content of sympathetic nerves increases toward the endings of the nerve cell. These nor-epinephrine granules have five functions: They take up dopamine, the dopamine is oxidized to nor-epinephrine, nor-epinephrine is bound and stored, they release stored epinephrine on appropriate stimulus, and they inactivate "free" nor-epinephrine and epinephrine.

The circulating epinephrine and nor-epine-

phrine comes from the adrenal medulla and the sympathetic nerve endings. The adrenal secretion is principally nor-epinephrine. Despite this, the adrenal medulla is the principal source of epinephrine. The catecholamines are secreted from the adrenal in spurts in response to stimulation of the sympathetic nerves, insulin, histamine, etc. The sympathetic nerve endings continuously secrete nor-epinephrine, and a major source is the sympathetic nerves in the heart; the release of nor-epinephrine by the nerves is partly dependent on nerve impulses but it is also partly independent of nerve stimulation.

The catecholamines that are secreted into the blood stream have a half life of 10 to 30 seconds. Thus the amount delivered to an organ depends on the perfusion of that organ during the minute after release. The "fate of catecholamine injected or secreted into the blood depends upon the organ to which it is delivered." Much of the catecholamine is removed by and stored in the sympathetic nerve endings. Some organs contain enzymes which chemically change the catecholamines after which they may be excreted. Most catecholamines are stored in the nerve endings. Destruction of catecholamines when it occurs is mostly by catechol-o-methyltransferase.

The physiologic effects of catecholamines seem to be short lived and last only as long as the blood level is elevated which is a minute or so. If the sympathetic nerves or the destructive enzymes do not remove catecholamines from the blood stream their effect is more prolonged. The ultimate effect of catecholamine may be altered by the sensitivity of the receptor organ. Most organs get their catecholamines from the blood stream; in a few instances they manufacture catecholamines.

The catecholamine in tissues seem to act as though they were in two pools: one with a rapid

turn over and one with a slow turnover. The half life of the easily released pool is two hours and the other pool 24 hours. Tyromine can release catecholamines from nerve endings into the blood stream; Reserpine has a somewhat similar, although not identical, effect. Sympathetic nerve stimulation releases only a portion of the stored nor-epinephrine.

"Tissue nor-epinephrine may be released from sympathetic nerve endings unchanged or it may be transformed within the nerve by the enzyme monoamine oxidase," small amounts are freed and act on receptor sites or are destroyed. The author points out that most of the nor-epinephrine made in the nerve endings does not have a physiological activity but is chemically altered and thus loses its biologic activity. The free catecholamines are said to have physiologic activity by affecting receptors; alpha receptors contract smooth muscle and beta relax smooth muscle. These receptors have never been detected chemically or histologically. Some of the catecholamines released by the nerve endings are so to speak "washed out," in other words removed from the sites of release and binding by the blood stream.

Storage catecholamines is the tightly bound nor-epinephrine, mostly found in the nerve endings; this is metabolized to dehydroxymandelic acid, dehydroxyphenoglycol, VMA, and methoxyphenol glycol. The amount of catecholamines in the storage pool is fairly constant. The author states that monoamine oxidase, which formerly was thought to be very important in inactivation of storage catecholamines, has a very limited role. Other substances as tyramine are acted upon to a greater degree than the catecholamines by monoamine oxidase. Inhibition of this enzyme thus increases the tissue level of a number of substances beside nor-epinephrine.

The major urinary metabolite of catecholamine is VMA, and it is a good index of catecholamine metabolism. Only a limited amount of the nor-epinephrine released by nerve endings gets into the urine and it is thus difficult to estimate the exact catecholamine metabolism by the measurements of the various urinary excretion products. Pheochromocytomas release large amounts of catecholamines but the pattern of different catecholamines is totally unpredictable. Other states which affect catecholamines in the urine are melanoma, phenyl ketonurea, dysautonomia, etc.

Certain drugs affect catecholamine uptake, release, metabolism, etc. Cocaine imipramine, and chlorpromazine block uptake of nor-epinephrine by sympathetic nerve endings. Some drugs produce the release of bound nor-epinephrine as sympathomimetics and reserpine. Some drugs block the release of tissue nor-epinephrine as guanethidine, ganglionic blockers, and M.A.O. inhibitors. Some drugs compete with nor-epinephrine for storage sites in the nerve endings as metaraminol alpha methyl DOPA.

In certain pathologic states, the author finds altered catecholamine concentration and activity. In cardiomegaly, the muscle fibers increase in size but the nerve endings do not increase; thus although the concentration of nor-epinephrine per gram of tissue decreases, the total amount in the heart is the same. In congestive failure there is a decrease in the nor-epinephrine content of the heart. It is suggested that the nor-epinephrine is used faster than it is made. In thyrotoxic heart disease, it is suggested there is a defect in binding nor-epinephrine thus making the heart very sensitive to injected catecholamines. Sympathetic amines injected into patients with pheochromocytoma get a blood pressure rise of more than 20 MM hemoglobin. If M.A.O. is inhibited, tyramine in cheese and wine is not destroyed; it releases nor-epinephrine from the nerve endings and induces all the effects of nor-epinephrine overdosage.

All in all, Wurtman's review of catecholamines is most worthwhile reading and is the best comprehensive report on this topic published in English.



#### Hydrocephalus Due to Aneurysmal Dilatation of Dural Sinuses

G. M. Almeida and W. C. Pereira (C. P. 3461, Sao Paulo, Brazil) *J Neurosurg* 26:267-269 (Feb.) 1967

A case of aneurysmal dilatation of the confluence of the superior, right lateral, and straight dural sinuses, with delamination of the tentorium, is presented. The aneurysm was located in the parieto-occipital region, occupying( about two thirds of the right hemicranium. A traumatic etiology cannot be excluded. No previous cases of similar condition have been described in the literature.

## MEDICINE IN THE



### THE MONTH IN WASHINGTON

Washington, D.C.—The American Medical Association strongly opposed a suggestion that doctors' fees under medicare be based on Blue Shield schedules.

The suggestion was made to AMA officials while they were testifying before the Senate Finance Committee on the House-approved social security bill which includes amendments to the medicare and medicaid programs. Dr. Samuel R. Sherman, San Francisco, chairman of the AMA's Council on Legislative Activities, said there would be heavy opposition from the medical profession to any change from the present usual-and-custodial fees.

Dr. Milford O. Rouse, president of the AMA, gave general approval to the bill passed by the House which, he pointed out, incorporated a number of changes recommended by the AMA. He said further substantive changes better could await the knowledge that one or two more years of experience would bring. However, he urged that consideration then be given to major changes in Medicare Plan B which covers physicians' services.

"We believe it is possible for the Congress, the medical profession and others interested in the subject to develop a new mechanism for delivering medical care to people over 65 that would be consistent with existing private sector mechanisms," Dr. Rouse said.

". . . the Congress realizes it has an open-end program with rising and perhaps uncontrollable costs. We believe that it is possible, and would be eminently practical, to devise another approach that could solve problems which beset Part B. One possibility, for example, might be to substitute for the Part B program a subsidy to all eligible persons, to be used for the purchase of private health insurance. Such an approach could have many advantages.

"The eligible over-65 patient would have a qualified private insurance program of his choice,

at no greater expense than he has under the Part B Medicare program; carriers would have a greater responsibility for their own performance with an opportunity to exercise initiative; the physician would continue to deal with his over-65 patient in every respect in the same way as he did before the patient's birthday; and the Congress would have a program with defined costs, and one which would offer the nation a comparison of mechanisms in use to meet the problems of financing health care of the elderly."

Other points in the AMA testimony included:

—Beginning with the provisions of Title XVIII (Medicare), the (House) bill does not place the disabled of all ages under Medicare, as had been proposed earlier. We think the House acted wisely in establishing instead, a special Advisory Council to study the problems related to the inclusion of this group and to study the costs involved.

—In addition to the present method of payment for physician's services, the (House) bill provides two new options: either the physician can submit his itemized bill directly to the carrier, in which case payment of 80 per cent of the reasonable charge would be made to him, providing the full charges do not exceed the reasonable charge, or to the patient at his direction; or the patient may submit the itemized bill and be paid 80 per cent of the reasonable charge. From the program's inception, the AMA has urged that the payment be permitted on the basis of an itemized statement of charges.

—Outpatient hospital diagnostic services would be transferred to Part B of Title XVIII and be subject to the deductible and coinsurance features. This is in keeping with our recommendation to the House Ways and Means Committee that outpatient services be included under Part B, and so remove the administrative difficulty of distinguishing between therapeutic and diagnostic services.

—The bill eliminates both the requirement for initial physician certification for hospitalization

of Medicare patients and the requirement for physician certification for outpatient hospital services. The AMA recommended the elimination of initial certification and the subsequent re-certification. We continue to recommend the addition of this second step to eliminate the requirement of any certification, since any need in this regard will be satisfied by the work of the medical review or utilization review committee.

—We believe that physicians, having been brought under Social Security, should be accorded the same privilege and opportunity for reaching a fully insured status as was accorded other professional groups when they were included in the program. Accordingly, we urge this Committee to consider the adoption for physicians of an "alternative insured status" similar to that permitted by the amendments of 1954 and 1956 which brought into the program many new groups of people and professional self-employed persons, including lawyers. Further, we urge this Committee to consider amendments that would "drop out" an appropriate number of years for physicians to make their eligibility for cash benefits both equitable and realistic.

—We must oppose the drug legislation offered before this Committee as amendments to H.R. 12080. We would suggest that rather than to enact such legislation it would be worthwhile at this time to study in depth, all the economic and therapeutic factors which enter into the use of prescription drugs.

\* \* \*

The federal government has stepped up its campaign against cigarette smoking with the issuance of a new report and the appointment of a Lung Cancer Task Force.

A second Public Health Service report on the subject summarizes three and one-half years of research and study into the health dangers of smoking. The Department of Health, Education and Welfare said the report confirms and strengthens the conclusions of a 1964 report. The second report provides new technical data on the relationship of smoking to cardiovascular, chronic bronchopulmonary disease, cancer and other conditions.

—Cigarette smokers have substantially higher rates of death and disability than their nonsmoking counterparts in the population. This means that cigarette smokers tend to die at earlier ages and experience more days of disability than com-

parable nonsmokers.

—A substantial portion of earlier deaths and excess disability would not have occurred if those affected had never smoked.

—If it were not for cigarette smoking, practically none of the earlier deaths from lung cancer would have occurred; nor a substantial portion of the earlier deaths from chronic broncho-pulmonary diseases (commonly diagnosed as chronic bronchitis or pulmonary emphysema or both); nor a portion of the earlier deaths of cardiovascular origin. Excess disability from chronic pulmonary and cardiovascular diseases would also be less.

—Cessation or appreciable reduction of cigarette smoking could delay or avert a substantial portion of deaths which occur from lung cancer, a substantial portion of the earlier deaths and excess disability from chronic bronchopulmonary diseases, and a portion of the earlier deaths and excess disability of cardiovascular origin.

Dr. Kenneth M. Endicott, director of the National Cancer Institute, is chairman of the Lung Cancer Task Force made up of 10 physicians and scientists.

Dr. Endicott said that the group will concentrate on research for the development of a less hazardous cigarette, prevention of occupational cancer due to exposure of workers to cancer-causing substances in their working environment, and improvement of the present low lung cancer cure rate of five per cent.



#### Medical Research Seminar

##### 1. Time and Place:

The Medical Research Seminar will be held this academic year at 10:00 a.m. in Room 5E19 at the University of Arkansas Medical Center.

##### 2. Purpose:

The seminar is designed to provide: (1) information, (2) analysis, (3) discussion, (4) criticism, (5) questions, and (6) suggestions for benefit of the individual making the presentation and those present. This type of rather informal presenta-

## THINGS TO COME

tion is replaced by the formal presentation of papers to be given before learned societies. This will provide the individual with a forum to question and criticize presentation and adequacy of visual (slide) material. Exact timing of the presentation under these conditions can also be accomplished.

**BECAUSE OF LIMITED TIME AVAILABLE (MEDICAL GRAND ROUNDS AT 11:00 A.M. SATURDAY), PRESENTATIONS, INCLUDING DISCUSSION, MUST NOT EXCEED 50 MINUTES. THE MEETING WILL ADJOURN AT 10:50 A.M. WITHOUT FAIL.**

11-11 Dr. Dennis Lucy—Creatinine turnover studies in muscle wasting diseases.

11-18 Dr. Kerrison Juniper, Jr.—Physiochemical formation of gallstones.

11-25 Dr. William J. Flanigan, Dr. George Ackerman—Anephric BP control. \*Univ. of Ark.-Texas Tech play in Little Rock.

12-2 Dr. Edwin A. Brosbe—Phage studies on *Mycobacterium kansasii*.

12-9 Dr. Branch T. Fields, Jr.—A new approach to treatment with amphotericin B.

12-16 Dr. Joseph H. Bates—Phage typing studies on *M. tuberculosis* from Southern India.

12-23 Cancelled, Christmas vacation.

12-30 Cancelled, Christmas vacation.

1968:

1-6 Dr. Calvin J. Dillaha—Current dermatologic investigations.

1-13 Dr. Laurence Bradham—Properties of liver phosphorylase.

1-20 Preview of accepted papers—Southern Section, American Federation for Clinical Research; Southern Society for Clinical Investigation.

1-27 Cancelled—AFCR, SSCI meeting.

END OF FIRST SEMESTER

\*University of Arkansas Razorback games are listed as we may have visiting physicians in Little Rock in attendance, with exception of 9-23, an early program of local interest only.



## OBITUARY

### Dr. J. S. Spillyards, Sr.

Dr. J. S. Spillyards, Sr., 84, of Sulphur Springs, died July 18, 1967. He was a retired Pine Bluff physician. Dr. Spillyards, son of the late Amasa

Hines and Mary Orlena Harper Spillyards, was a native of Braxton, Mississippi. He moved to Converse, Louisiana in early childhood and attended school there. He attended Mount Lebanon College near Ruston, Louisiana, and graduated from Memphis Hospital Medical College in 1911. Dr. Spillyards came to Pine Bluff in February of 1911 and was a practicing physician there until his retirement on April 1, 1962. He was married to the former Bernice Alline Frey on February 26, 1912 at Memphis. Mrs. Spillyards died on March 8, 1953. Dr. Spillyards was a Mason and a member of Pine Bluff Lodge 69, the Jefferson County Medical Society and the Arkansas Medical Society. He was a senior physician in age at Jefferson Hospital. He was a member of South Side Baptist Church and was a member of the Board of Deacons there for 38 years. He is survived by two sons and two daughters.

### Dr. J. M. Walls

Dr. J. M. Walls, 66, of Blytheville, died August 17, 1967. He was born in Dorcy, Arkansas, and moved to Blytheville in 1936. He was a physician and surgeon there until his retirement. After coming to Blytheville he was associated with Dr. F. L. Husbands and in 1938 he founded Walls Hospital, now known as Doctors Hospital. He was a veteran of World War Two and attained the rank of major. He commanded a 250-bed hospital in New Guinea. He was a member of the Masonic Lodge and was a Shriner. He is survived by his wife, his mother, two sons, three brothers, a sister and six grandchildren.



### Keloids Containing Hair and Sebaceous Glands

H. L. Fine (Dept of Dermatology, New York Univ, New York) *Arch Derm* 96:185-187 (Aug) 1967

Clinical and histological proof of hairs and sebaceous glands within a keloid present for over 20 years is described. The keloid arose from the site of vaccination against smallpox. Other keloids containing hairs were present in the same patient. This case is probably the first reported of a keloid, older than one year, containing hair and sebaceous glands.



## PERSONAL AND NEWS ITEMS

### Dr. Davis Goldstein Completes Fifty Years of Membership in the Fort Smith Rotary Club



The Fort Smith Rotary Club was organized and admitted to Rotary's International association June 1, 1916. It was August of the following year that Dr. Davis Goldstein was elected to membership. He remembers his first years in Rotary as war years, with the local club participating in all Liberty Loan drives, promoting a six cent street car fare which paved the first street to the factory district. These early Rotarians also secured the old city park for a stadium and athletic field and a night matron was maintained at the local railroad station.

Dr. Goldstein remembers that many of the services that are now provided by the Chamber of Commerce and other agencies were first provided by this civic club. Their mottos of "Service Above Self" and "He Profits Most Who Serves Best" continue to be the guiding principal for today's Rotarians.

1917 found Dr. Goldstein with the 82nd Division in France. He later became a Regimental Surgeon in the 328th Division and was decorated for bravery in the Meuse-Argonne Offensive. Another illustrious member of the 328th was Sgt. Alvin C. York.

After World War I, he returned to Fort Smith

to continue his medical practice, now in its 55th year.

Having studied at Tulane, University of Tennessee, and in dermatological clinics in London and Vienna, much of his life has been spent in medical service to his local community. He served for many years as chairman of the Sebastian County Department of Public Welfare, he was instrumental in organizing the Sebastian County Cancer Society and the National Foundation for Infantile Paralysis, has served as past commander and chairman of the Child Welfare Committee of the American Legion. In 1965 he served as president of the Fifty Year Club of the American Medical Association. His services have been recognized in that he has received the Golden Deeds Award from the local Exchange Club in 1954 and has received special recognition from medical organizations.

In 1965, he presented the Davis Woolf Goldstein Dermatological Library to the University of Arkansas Medical Center at Little Rock. He provided not only the basic library and room furnishings but in addition, a monetary fund to provide for the accession of new books.

Dr. Goldstein is still in regular attendance in the local Rotary Club, having served as president in 1934-35, and still takes an active part in all club activities. His service to his community both in the field of medicine and social service continues to exemplify the finest ideals of Rotary.

### Dr. Franklin Joins Clinic

Dr. Robert M. Franklin has joined the medical staff of the Millard-Henry Clinic in Russellville. He is a 1963 graduate of the University of Arkansas School of Medicine.

### Dr. Berry Opens Offices

Dr. Donald Berry has announced the opening of offices in a newly completed clinic building in Jonesboro for the practice of obstetrics and gynecology. Dr. Berry is a graduate of the University of Tennessee School of Medicine.

### Drs. Millard and Clark Attend Review

Dr. Roy Millard of Russellville and Dr. Curtis

B. Clark of Sheridan attended a July 17-22 general practice review at the University of Colorado Medical Center, Denver.

**Dr. Underwood in Clarksville**

Dr. Clyde H. Underwood of Clarksville is now practicing medicine with Dr. R. H. Manley of Clarksville. Dr. Underwood is a 1966 graduate of the University of Arkansas School of Medicine.

**Dr. Allen Raises Money**

Dr. Hoyt R. Allen of Little Rock has raised about \$11,000 to provide a swimming pool for nursing students and personnel at St. Vincent Infirmary in Little Rock.

**Magie Clinic Has New Doctor**

Dr. Clifford L. Evans, a native of Little Rock, has joined the Magie Clinic in Morrilton for the practice of medicine. Dr. Evans is a graduate of the University of Arkansas Medical School.

**Governor Appoints Members**

Governor Rockefeller has announced the members of the Health Planning Council he has established to help develop a state health plan under a new federal law (PL 89-749) that provides a large grant for health services. Physicians among the State agency members with unlimited terms are: Dr. J. T. Herron, the state health officer; and Dr. George W. Jackson, superintendent of the State Hospital. Physician members representing the health profession with three year terms are:

Dr. Winston K. Shorey, University of Arkansas Medical Center; Dr. Ben N. Saltzman of Mountain Home.

**Dr. Daniel in AAGP**

Dr. Samuel V. Daniel of Conway has been elected to active membership in the American Academy of General Practice.

**Dr. Raney to Cave City**

Dr. William Troy Raney, a native of Cleburne County, has opened a clinic in the Cave City Medical Center at Cave City. Dr. Raney came to Cave City from Carmichael, California where he had been practicing medicine for five years.

**Dr. Crow Appointed**

Dr. H. Blake Crow of Prescott has been appointed as physician and surgeon of the Missouri-Pacific Railroad.

**Dr. Loveless on Program**

Dr. Donald Loveless of Benton was featured on the program at the Central Arkansas Chapter of Full Gospel Businessmen's Fellowship meeting held at Little Rock in July.

**Dr. Taylor AAGP Member**

Dr. Chaney W. Taylor of Batesville has been elected to active membership in the American Academy of General Practice.

**ANSWER—What's Your Diagnosis?**

**DIAGNOSIS:**  
Tetralogy of Fallot.

**DISCUSSION:**  
The heart is boot-shaped (*coeur en sabot*). The elevated apex of the heart is secondary to the markedly enlarged right ventricle. The pulmonary artery segment is relatively concave. The pulmonary arteries are small and pulmonary vascularity is diminished.

**ANSWER—Electrocardiogram of the Month**

**RATE:** 75    **RHYTHM:** Sinus

**PR:** .17 sec.    **QRS:** .07 sec.    **QT:** .36 sec.

**SIGNIFICANT ABNORMALITIES:** None definite; U wave is encroaching on T.

**INTERPRETATION:** Borderline tracing, suggesting possible hypokalemia.

**COMMENTS:** Changes due to hypokalemia are usually more definite with increased voltage of U merging with T and ST depression.

**Doctors Get New Clinic**

Dr. A. R. Brown and Dr. H. C. Palmer, Jr. of Searcy has recently moved into a new clinic in Searcy.

**Dr. Parker Moves to Fayetteville**

Dr. Lee Parker, Jr., formerly of McGehee, became associated with the Doctors Clinic in Fayetteville on September 1, 1967. A graduate of the University of Arkansas Medical School in 1954, he had practiced in McGehee for nearly eight years. Following graduation from medical school, Dr. Parker was in the medical division of the U. S. Air Force for two years, stationed in Greenville, South Carolina. Upon completion of his tour of duty with the Air Force, he became associated with Dr. H. W. Thomas at Dermott, Arkansas. Two years ago Dr. Parker was chosen "Outstanding Young Man of the Year" by the McGehee Chamber of Commerce.

**Clarksville Hospital Staff Increases**

Clarksville Hospital now numbers five physicians, with the new membership of Dr. Clyde Underwood. The other staff members are: Dr. James M. Kolb, Sr., Chief of Staff; Dr. William R. Scarborough; Dr. R. H. Manley; and Dr. Guy P. Shrigley.

**Dr. Lawson Joins Dr. Joseph**

Dr. Larry Lawson of Conway has entered partnership with Dr. Ralph Joseph at Walnut Ridge. He is a graduate of the University of Arkansas Medical School and recently finished three years of residency at the University of Missouri, completing his qualifications for the American Board of Surgeons.

**Clinic at Mountain Home Expands**

Expansion of the Cheney-Snow Clinic has begun. Completion of the \$60,700 structure is scheduled for October 13, 1967. Dr. Jack Wilson and Dr. William R. Snow have their offices there now, and Dr. Max Cheney will return in September.

**Dr. Kirk Locates at Benton**

Dr. Marvin N. Kirk, Jr. has opened his practice at Benton, following the completion of his internship at the Arkansas Baptist Hospital in Little Rock. He is a graduate of the University of Arkansas Medical School.

**Dr. Levy to Direct Meeting**

The American College of Physicians will hold a regional scientific meeting for specialists in internal medicine in Hot Springs, September 9, under the general direction of Dr. Jerome S. Levy of Little Rock, the ACP Governor for Arkansas.

**Medical Center Staff to Include Dr. Walls**

Dr. Robert C. Walls has joined the University of Arkansas Medical Center staff as Assistant Professor in the School of Medicine's Division of Biometry. He is a graduate of Harding College, received his M.S. degree from the University of Arkansas, and was granted his Ph.D. degree in statistics by Oklahoma State University.

**Fifty Year Club Member Retires**

Dr. J. H. McCurry, a member of the Arkansas Medical Society and the Fifty Year Club of American Medicine since 1949, retired from his practice at Cash, Arkansas on July 31, 1967. He is the Secretary Emeritus and Business Manager of the Fifty Year Club of American Medicine. Dr. McCurry was born in 1874 and graduated from medical school in Tennessee in 1897. He is now residing at 2631 South Twelfth Street, St. Louis, Missouri 63118.

**Dr. Choate's Son Serves 1000th Day**

Major Phillip Choate, son of Dr. Hoyt Choate of Little Rock, recently marked his thousandth day of medical service in Southeast Asia. During his four tours there he has earned the Air Medal for outstanding achievement and airmanship and the Legion of Merit, the Air Force's second highest medal. At the present, he is Chief of the 606th Air Command squadron's medical section at Nakhon Phamon, Thailand.

**Dr. Saltzman Spoke at Conference**

Dr. Ben Saltzman of Mountain Home spoke at a conference of the California Medical Association in Los Angeles in October.

**Dr. Jansen Spoke to Business Women's Ass'n**

Dr. G. Thomas Jansen of Little Rock spoke to the Silver Charter Chapter of the American Business Women's Association in October.

**Dr. Ambrose Walker Elected to AAGP**

Dr. Ambrose Walker of Mammoth Spring has been elected to active membership in the American Academy of General Practice.

**Dr. Livingston Announces Association**

Dr. Bill B. Livingston of Stephens announces the association of Dr. V. L. Harville for the practice of general medicine and surgery. Dr. Harville is a 1964 graduate of the University of Arkansas School of Medicine. Dr. Harville just completed a two year tour of duty as a medical officer with the U. S. Army in Europe.

**Doctors Elected to Board of AAGP**

Dr. James W. Branch of Hope was elected president of the Arkansas Chapter of the American Academy of General Practice. Also elected were Dr. A. W. Strauss Jr. of Pine Bluff, president-elect, and Dr. Walter H. Lane of Dover, Dr. Kemal Kuitait of Fort Smith and Dr. Harold Hedges of Little Rock, members of the Board of Directors.

**Drs. Henderson and Northcutt Spoke in Stuttgart**

Dr. F. M. Henderson, Pine Bluff pediatrician, and Dr. C. E. Northcutt of Stuttgart spoke at the third quarterly meeting in Stuttgart of the Arkansas Society of American Medical Technologists.

**Dr. Lee Is New Chief of Staff**

Dr. W. J. Lee was selected to serve as Chief of Staff of Lafayette County Memorial Hospital. Dr. Lee is from Stamps and will succeed Dr. R. W. Hunter of Lewisville. The Board of Governors reappointed Dr. Lee, Dr. Cross, and Dr. Hunter to the Hospital Medical Staff with full medical staff privileges and also reappointed Dr. R. H. Harrison to the courtesy staff with full courtesy staff privileges.

**Dr. Edwin Barron New Administrator**

Dr. Edwin N. Barron of Little Rock is the new administrator of the medical program at the State Penitentiary. He is replacing Dr. Gyn Atnip who resigned the position some months ago.

**Dr. Black's Article Published by Argosy Magazine**

Dr. T. N. Black, a retired Hot Springs physician, earned a membership in the Honest Abe Club by the September issue of Argosy Magazine with a story about a cougar hunt in New Mexico.

**Dr. Lawrence Jones Moves to Fayetteville**

Dr. and Mrs. J. Lawrence Jones and three children have moved to Fayetteville from Ozark. He has accepted a position as staff doctor at the University of Arkansas Infirmary. He resided in Ozark from the fall of 1959 and was associated with Dr. C. C. Long since that time.

**Mountain Home Clinic Has New Doctor**

Dr. Arthur L. Beard of Gainesville, Missouri, has joined the staff of Saltzman and Guenthner Clinic. Dr. Beard graduated from the University of Arkansas School of Medicine in 1956 and served a year's internship and a year's residency in surgery at Arkansas Baptist Hospital, Little Rock. He entered general practice at Gainesville in 1958.

**Dr. Lucille M. K. Champion Elected to AAGP**

Dr. Lucille M. K. Champion was elected to active membership in the American Academy of General Practice. Dr. Champion is from Stuttgart.

**Doctor Celebrates 50th Wedding Anniversary**

Dr. and Mrs. O. H. Clopton, Sr. celebrated their golden wedding anniversary on August 17, 1967. They were married in Paragould on August 6, 1917. They now reside in Rector.

**Doctor Turns to Art**

Dr. Edward Clark Gillespie of Little Rock, a specialist in gynecology, has turned to painting for a hobby. His paintings have been on view at the Gallery of Lakewood House, North Little Rock, sponsored by the Seventh Street Gallery.

**Drs. Honeycutt and Robinson Elected to AAGP**

Dr. Thomas D. Honeycutt and Dr. Guy Robinson were elected to serve as secretary-treasurer and delegate to the American Academy of General Practice at its convention at the Velda Rose in Hot Springs in August.

**Hospital Plans to Expand**

Dr. Herbert Hollis, chief of the medical staff at Forrest Memorial Hospital in Forrest City reports that the staff supports plans for a 10 year building program bringing the hospital to a 200 bed capacity.

**Appointments to University of Arkansas School of Medicine**

Dr. Winston K. Shorey, dean of the University

School of Medicine, announced that Dr. Roger B. Bost was appointed director of the Arkansas Regional Medical Program. Dr. Frank Bryant of Pine Bluff and Dr. Fred Krock of Fort Smith were appointed to the Advisory Group. Dr. Thomas E. Townsend of Pine Bluff is chairman of the Advisory Group.

#### **Dr. Hollenberg Addressed Casualty Transportation Meeting**

Dr. Henry Hollenberg, a Little Rock surgeon, addressed 62 ambulance drivers, firemen, nurses and policemen at the Casualty Transportation Course at the University Medical Center.

#### **Dr. Rouse Spoke at Pulaski County Medical Society Meeting**

Dr. Milford O. Rouse of Dallas, president of the American Medical Association, spoke at a meeting honoring the past-presidents of the Pulaski County Medical Society. Past-presidents on hand were: Dr. Joe Sanderlin, 1931; Dr. S. C. Fulmer, 1933; Dr. M. J. Kilbury, 1936; Dr. G. W. Reagan, 1942; Dr. Alan Cazort, 1943; Dr. Carl Rosenbaum, 1944; Dr. H. G. Hollenberg, 1948; Dr. T. Duel Brown, 1949; Dr. D. H. Autry, 1950; Dr. Raymond Cook, 1953; Dr. Edwin Gray, 1955; Dr. Jerome Levy, 1957; Dr. Hoyt Choate, 1958; Dr. Joseph Norton, 1960; Dr. John W. Smith, 1961; Dr. John McCollough Smith, 1962; Dr. Robert Watson, 1963; Dr. Elvin Shuffield, 1964; Dr. Payton Kolb, 1965; Dr. Joseph Calhoun, 1966.



DR. WALTER ELY BROOKS is a new member of Washington County Medical Society. He received his preliminary education from the College of Charleston, Charleston, South Carolina. He graduated from the Medical College of South Carolina in 1944 and interned at Roper Hospital

in Charleston, South Carolina. He also served with the Army Medical Corps. He practiced in Charleston, South Carolina from 1951 'til 1966. His specialty is urology. Dr. Brook's address is Evelyn Hills, Fayetteville.

DR. LENITA C. MASSEY is a new member of the Crittenden County Medical Society. She received her preliminary education from the Memphis State University and her medical education from the University of Tennessee, graduating in 1964. She served her internship at Baptist Hospital in Memphis and was a resident in pathology at the John Gaston Hospital in Memphis. She is now in general practice with an office at 200 South Rhodes in West Memphis, Arkansas.

DR. JOE E. HUGHES is a new member of Lawrence County Medical Society. A native of Blytheville, Arkansas, he received his preliminary education from Arkansas State College at Jonesboro, Arkansas. He was graduated from the University of Arkansas School of Medicine in 1963 and he interned at Wilford Hall United States Air Force Hospital, Lackland Air Force Base, Texas. He served in the U. S. Air Force from 1963-1967. Dr. Hughes' address is 421 SW Third Street in Walnut Ridge, Arkansas. His practice consists of general medicine and surgery.

A new member of Pulaski County Medical Society is DR. THOMAS HUGH ALLEN, a native of Little Rock, Arkansas. He attended Vanderbilt University and was graduated from the University of Arkansas School of Medicine in 1959. He interned at the University of Arkansas Medical Center and he served in the U. S. Air Force from 1960-62. Dr. Allen is a plastic surgeon and his office address is 500 South University in Little Rock, Arkansas.

Pulaski County Medical Society announces that DR. CHARLES WILBUR LOGAN is a new member. He is a native of Nashville, Tennessee, and he received his pre-med from Southern Methodist University in Dallas, Texas. He received his M.D. degree from Vanderbilt University School of Medicine in Nashville, Tennessee in 1960 and he interned at New York Hospital. He served in the U.S. Army from 1965-1967. Dr. Logan's address is 500 South University. His specialty is urology.

DR. RAYMOND CHARLES READ has been added to the roster of members of the Pulaski County Medical Society. A native of London, England, he received his preliminary education from Cambridge University in London. He was graduated from the University of Minnesota at Minneapolis in 1946 with a M.D. degree. He then interned at University of Minnesota Hospitals and Kings College Hospital in London. He served in the Royal Air Force from 1948-1950. Dr. Read specializes in general surgery, thoracic and vascular surgery and his office address is 300 East Roosevelt Road, Little Rock, Arkansas.

A new member of Randolph County Medical Society is DR. JAMES JOSEPH WYLLIE, a native of Pocahontas, Arkansas. He received his preliminary education from Loyola University and obtained his M.D. degree from Louisiana State University Medical School in 1943. He interned at Charity Hospital in New Orleans, Louisiana and did residency training at the same hospital. He has served in the U.S. Army and he practiced at Orange, Texas from 1948 until 1966. Dr. Wyllie's specialty is general surgery and gynecology and his office address is 308 Broadway, Pocahontas, Arkansas.

DR. DENNIS DURWOOD LUCY, JR. is a new member of Pulaski County Medical Society. He was born at Little Rock and obtained his pre-med at Hendrix College at Conway. In 1959, he was graduated from the University of Arkansas School of Medicine and he interned at the University of Arkansas Medical Center. Dr. Lucy is now Assistant Professor and Head, Division of Neurology at the University of Arkansas School of Medicine.



## PROCEEDINGS OF SOCIETIES

The Council of the Arkansas Medical Society met at 12:00 noon on Sunday, August 13, 1967, at the Sam Peck Hotel in Little Rock. Present

were: Chairman Townsend, President Norton, Secretary Shuffield, Treasurer Saltzman, Councilors Gray, Millar, Duzan, Wood, Payton Kolb, McCrary, Applegate, Fowler, Editor Kahn, Past Presidents Snodgrass, Hyatt, Whittaker, James Kolb, Johnston, Ellis, Dean Shorey, Thomas D. Honeycutt, George K. Mitchell, Mr. Jim Harper, Mr. Eugene Warren, and Mr. Schaefer.

The chairman observed that a quorum was not present. Upon the motion of Shuffield and Saltzman, those present resolved themselves into a Committee of the Whole for the conduct of business.

Action was taken as follows:

I. Dr. Thomas Honeycutt, chairman of the Insurance Committee, and Mr. Jim Harper, of Rather, Beyer and Harper Insurance Agency, discussed a proposal for a Personal Catastrophe Liability Insurance Program for members of the Society. Upon the recommendation of Dr. Honeycutt and of legal counsel (Mr. Warren), it was voted to approve the coverage for Society members. Motion by McCrary and Saltzman.

II. The chairman discussed for the information of the Council the action by the Governor on an appointment to the Arkansas State Cancer Commission. Mr. Warren reported that the appointment had been made not in accordance with the law and advised the Council to insist on the appointment by the Governor of one of the two nominees submitted by the Society, in accordance with the law.

III. The editor of the Journal, Dr. Kahn, discussed salary arrangements for his journal assistant. Upon the motion of Fowler and Saltzman, it was voted to increase the Society's 50% payment on the journal clerk's salary to \$2,100 per year.

IV. Dr. James M. Kolb reported on the meeting of the AMA House of Delegates in Atlantic City, stating that he felt that the Arkansas Medical Society needed more representation at the meetings. Dr. Kolb served notice on the Council that he would not be a candidate for re-election to the position of delegate to the AMA.

V. The chairman advised the Council that Dr. Lee Parker, a newly-elected councilor from the fourth district, would be leaving the district on September 1st. He requested that no action be taken to elect a new councilor, pending receipt of the recommendations of the physicians from the fourth councilor district.

VI. Mr. Schaefer discussed the libel and slander

insurance policies covering advertising and published matter in the Journal of the Arkansas Medical Society. Upon the motion of Norton and Applegate, it was voted to purchase coverage for both risks as offered through the State Medical Journal Advertising Bureau.

VII. Dr. Whittaker discussed the need for a committee for correlation of government schemes. Upon the motion of Norton and Applegate, it was voted to authorize the chairman of the Council to appoint a committee to work with Dr. Whittaker and the Executive Committee to study the proposal and report to the Council at its next meeting.

VIII. The chairman of the Council reported on the continuing liaison between the Executive Committee and the Department of Public Welfare. He further reported on the approval by the Executive Committee for the purchase of a calculating machine and a check signer for the headquarters office. This equipment was not included in the budget approved at the beginning of 1967. Upon the motion of Applegate and Fowler, the Committee of the Whole voted to approve the Executive Committee actions.

IX. Mr. Schaefer advised that the administrator of the Veterans Administration Hospital had given notice that the VA had approved a fee schedule for the out-patient services contract with the Society, on the basis of a \$5 unit value based on the California Relative Value Scale for all fields of medical practice. By general agreement, the Committee of the Whole directed that the fee schedule committee be asked to negotiate with the Veterans Administration on the basis of "usual and customary" fees.

X. Upon the motion of Shuffield and Norton, the Committee adopted a resolution commending Mr. Wilbur Mills for his service as congressman. A copy of the resolution is incorporated as an attachment to these minutes.

XI. Upon the motion of Shuffield and Applegate, the Committee adopted a resolution on rural traffic accidents submitted by Dr. Saltzman. Copy attached.

XII. President Norton read a letter from General Peatfield, Executive Director of the Civilian Health and Medical Program of the Uniformed Services (Military Medicare) stating that the Society's contract with the government will not be renewed when it expires on March 31, 1968. General Peatfield's letter assured Dr. Norton that this

action was taken at the direction of the Defense Department on the basis that a conflict of interest exists when a medical society administers the program. He advised Dr. Norton that the contracts of all medical societies acting as fiscal administrators were being terminated. General Peatfield further stated that the administration of the program in Arkansas had been efficient, effective, and conducted in a capable manner. Mr. Schaefer advised the Council that due to the liberalizations of the program which had become effective during 1967, the administration of the program was going through a most difficult period of re-adjustment. He suggested that, rather than wait for the end of the contract period, the Society request it be relieved of the responsibility of administering the program in Arkansas at the earliest possible date. On the motion of Norton and Saltzman, the Committee voted to request that the Society's contract be terminated as soon as possible and that Arkansas Blue Cross-Blue Shield be recommended as the Society's successor for the administration of the program.

XIII. Dr. Norton reported that a conference on abortions was to be held which he felt the Arkansas Medical Society should have a representative attend. Upon the motion of Shuffield and Applegate, the Committee voted to pay the expenses of one representative, to be selected by Dr. Norton, to go to the conference.

XIV. Dr. Norton reported on his many activities since becoming president of the Arkansas Medical Society. He advised the Council that the president of the AMA, Dr. Milford Rouse, was to meet with the Pulaski County Medical Society at 7:00 P.M. on September 5 at the Medical Center. He invited all members of the Council and their wives to attend. Dr. Norton stated that plans for the officers conference were going on and that the Governor had reserved the weekends of December 9th and 16th to appear at the conference, depending on which weekend is selected.

The meeting adjourned at 3:00 P.M.  
Approved: T. E. Townsend, M.D.

Chairman of the Council

ATTACHMENT, Council Minutes of August 13,  
1967

RESOLUTION RE: Congressman Mills  
WHEREAS, the Honorable Wilbur Mills, Representative from Arkansas to the United States House of Representatives, holds a most-responsi-

ble position as Chairman of the Ways and Means Committee of the United States House of Representatives.

WHEREAS, Mr. Mills has demonstrated, over years of service, a consistent diligence and dedication to his work, done with intelligence, common sense and persistence;

WHEREAS, Mr. Mills has always shown himself to be open, available, concerned, sensitive and responsive to legitimate approaches by his constituents in Arkansas; and

WHEREAS, the experience and knowledge of Mr. Mills is so very important to all Americans, especially considering his honored position in our government;

THEREFORE, BE IT RESOLVED: That the Council of the Arkansas Medical Society express herewith its respect, admiration, and appreciation to the Honorable Wilbur Mills, for his continued services to Arkansas and to our entire nation.

#### RESOLUTION RE: RURAL TRAFFIC ACCIDENTS

WHEREAS, several recent studies have shown that rural traffic accidents have resulted in mortality rates four times that of urban accidents despite less severe injury in many cases, and

WHEREAS, the higher fatality rate seems to be related to inadequate first aid procedures and transportation, and

WHEREAS, the American Medical Association, the American Red Cross, the National Safety Council and many farm organizations have gone on record recommending a program of first aid instruction.

NOW, THEREFORE, BE IT RESOLVED, that the Arkansas Medical Society adopt and help to implement, through the county medical societies, the following five point program:

1. Rural communities coordinate their efforts with adjacent towns of urban centers in analyzing existing patterns of response to medical emergencies;

2. Rural and urban communities institute a medical service area program for emergency medical transportation facilities and health personnel.

3. Rural urban communities, where possible, adopt standards for ambulance equipment, personnel and operation, liability insurance requirements, maintenance of records, and duties of regulatory agencies, and penalties, by ordinance, to be imposed if the standards are not met.

4. Rural and urban communities provide a program of advanced Red Cross first aid instruction for the non-medical people most frequently called in rural emergencies, especially police, sheriffs, and ambulance crews.

5. Rural and urban communities develop a continuing campaign directed toward first aid instruction for rural families and, particularly, young people through the schools, youth organizations, and other education channels.



#### HEALTH AND ADJUSTMENT PROBLEMS OF CHILDREN ACCORDING TO THEIR TEACHERS<sup>1</sup>

Elizabeth Bahn Reese<sup>2</sup>

During the summer of 1963 the Pulaski County Association for Mental Health initiated a survey of the health needs of Pulaski County elementary school children as judged by their school teachers. Information was obtained from 86 per cent of the elementary school teachers in the three districts of the county by means of a rather carefully prepared questionnaire. No claim is made for the medical accuracy of the findings, but the data does portray school teacher opinions and observations about learning, adjustment, and attitudes about health problems. Obviously this is no substitute for epidemiological studies based on thorough evaluations. Nevertheless, health information presented below may be of value to practicing physicians who are concerned with lay opinions about health problems, and to all physicians who are interested in the public school systems and in the children who attend them.

#### METHOD

The basic tool was a questionnaire constructed by a committee with representation from the Pulaski County Mental Health Association, the Association for Childhood Education, and elementary teachers, supervisors, and key personnel from each school district. Members of the Department of Psychiatry of the University of Arkansas Medical Center consulted with the committee in the preparation of the questionnaire. The three Su-

perintendents requested and obtained the cooperation of their teachers. The questionnaires were coded in order to maintain the anonymity of teachers and schools.

The survey covered: Learning Problems, Home Factors, Physical Problems, and Social Adjustments. Sample questions were:

How many children have problems for which they need help?

How many children seem to have learning problems?

In what areas do these learning problems occur?

What are some of the physical problems of your children?

What do you know of home factors?

How many come from homes of working mothers?

Where there is only one parent?

Where income is inadequate?

Where the child is frequently absent from school?

What about the social adjustment of your children?

How many do not get along with their peers?

How many are fearful,—excitable,—restless,—irritable,—boastful,—selfish,—depressed or discouraged,—shy,—fight,—lie,—steal,—run away from home,—run away from school,—bite nails,—are exceptionally bright,—are slow in learning?

What are some of the problems with which the children need help, perhaps from professionals?

The final part of the questionnaire asked for priority ratings from the teachers of the following problems for which they desired help from the Pulaski County Guidance Center:

- Children who cannot get along with peer group
- Attention-demanding children
- Shy and/or withdrawn children
- Children who appear to be capable of learning but are failing in school
- Sex problems of children
- The poor reader
- Other (specify)

The returned questionnaires were tabulated by about 50 people from the P.T.A. and/or the Pulaski County Association for Mental Health.<sup>3</sup>

## RESULTS

Completed questionnaires dealing with 27,095 students were returned by 932 teachers (86%). The lengthy final report summarized results in terms of grade level, school system, and race. Age range was 6-16, with most from 6-12. This brief summary will present only some of the illustrative

findings.

### Socio-economic Data

For the 25,565 homes represented by the children, their teachers considered family income to be inadequate in 10 per cent of white homes and 42 per cent of Negro homes. Of the white children, 31 per cent had working mothers, as compared with 54 per cent for Negro children.

### Learning Problems

For the 27,095 students the following opinions were reported:

Teacher Assessment	Number	Per Cent
Grade repeaters	2,951	10.9
Performing below I.Q.	2,844	10.5
Performing below		
Achievement Tests	4,802	17.7
Reading difficulty	6,537	23.5
Arithmetic difficulty	5,399	19.9

The following table shows reading difficulty by grade and race, rounded off to the nearest one per cent:

Grade	White		Negro	
	Number	Per Cent	Number	Per Cent
First	555	14	528	27
Second	657	21	416	31
Third	613	22	426	33
Fourth	560	19	427	36
Fifth	641	22	498	40
Sixth	450	17	369	35

At the time the survey was completed in August, 1964 Little Rock had 304 children in special education, of which 154 were white and 150 Negro. North Little Rock had 65 white and 30 Negro children in nine special education classes. Pulaski County Special School District had one special education class at Cloverdale School.

### Physical Impairments

The following physical problems were reported for the 27,095 children:

Impairment	Number	Per Cent
Visual disability (correction not stated)	1,259	4.6
Speech defects	1,190	4.4
Allergies	1,191	4.4
Hearing problems	449	1.7
Malnutrition	363	1.3
Respiratory (no breakdown for allergies)	338	1.2
Orthopedic (no subcategories)	173	.6
Heart problems	133	.5
Convulsive attacks	65	.2

Other physical disabilities  
(not categorized) 110 .4

### Adjustment Problems

For the full sample the following characteristics were noted:

Characteristic	No.	Per Cent	Characteristic	No.	Per Cent
Slow in learning	5,306	19.6	Restless	3,060	11.3
Attention wanders	3,980	14.7	Shy	1,869	6.9
Tattles on other children	3,683	13.6	Lying	1,282	4.7
Nail biting	3,062	11.3	Exceptionally bright	1,160	4.3

Only 90 children (0.3%) showed lack of bowel control and 65 children (0.2%) were cited in the categories "running away from home" and "running away from school." In the nonspecific category "need professional help," the following information is presented in terms of grade and race:

Grade	<b>"Need Help"</b>			
	White	Negro	Number	Per Cent
First	224	7	422	26
Second	397	21	384	29
Third	426	15	362	29
Fourth	379	13	260	21
Fifth	475	16	409	33
Sixth	237	13	116	35

In their responses the teachers indicated greatest need for help in dealing with children who are falling below their learning capacity. They evidenced almost as much concern for the poor reader. They indicated a desire for help in dealing with most of the problems listed.

### COMMENT

This survey had the usual limitations of the questionnaire method, with one exception: the return rate of 86% from busy school teachers was remarkably high and most of the questionnaires returned appeared to have been carefully prepared. Most of them included thoughtful comments. We may justifiably assume validity for teacher judgments in the area of learning problems. We may also reasonably assume some sophistication in assessing behavioral problems since the teachers have ample opportunity to observe each child over many hours. The least valid impressions have to do with physical impairments, but it is germane to physicians and others to know what the teachers *think* the health problems are.

No attempt was made to discover which of these health problems were receiving appropriate attention.

In comparatively excellent school systems it is noteworthy that school teachers believe that the educational system is falling short for a rather large per cent of the students.

### SUMMARY

This brief summary of a rather large document is presented on the assumption that it might be useful to the physician as physician and as citizen. Questionnaires designed to survey learning, adjustment, and health problems were submitted to all elementary school teachers in the three public school systems in Pulaski County, with a return rate of 86%, representing 27,095 elementary school children. It was reported that 10% of these children were performing below potential as measured by I.Q. tests and that 18% were performing below potential as measured by achievement tests. Reading difficulties were reported in 24%. Significant health and adjustment problems were reported.

The survey, accomplished in 1963, is obviously out of date and should be improved and repeated. Physicians are challenged to learn the health problems of their own communities through the use of more sophisticated methods. As citizens they are urged to improve their own school systems. Society cannot afford mediocrity in education nor in health.

<sup>1</sup>This article is based on the mimeographed publication: *Evaluation of Needs of Elementary School Teachers for Help in Dealing with Children with Problems*, prepared by the Pulaski County Association for Mental Health, Frances H. Allen, Executive Secretary, and published in August, 1964.

<sup>2</sup>Member Pulaski County Medical Auxiliary; member survey committee.

<sup>3</sup>The tabulation of results was directed by Frances H. Allen, assisted by the author and by Mrs. Arnold Walton.

## BOOK REVIEWS

*Manual of Preoperative and Postoperative Care by the Committee on Pre and Postoperative Care, American College of Surgeons, Editorial Subcommittee: Henry T. Randall, M.D., James D. Hardy, M.D., Francis D. Moore, M.D.*

This book is an authoritative, valuable manual on pre and postoperative care. It represents the opinion of a group of outstanding surgical authors. It is of special importance to medical students and general physicians, but is also a valuable book for many physicians. It is highly recommended.

# T U B E R C U L O S I S

# A B S T R A C T S



Sponsored by Arkansas Tuberculosis Association

## Long-Term Oxygen For Hypoxemia

*Six patients with chronic airway obstruction with hypoxemia were administered continuous oxygen for long periods. Clinical status improved and exercise tolerance increased, indicating that this type of therapy may be useful in the rehabilitation of such patients.*

In planning a rehabilitation program for the hypoxic patient with chronic lung disease, the use of continuous oxygen seems a reasonable therapeutic approach.

The development of a liquid oxygen system makes possible ambulatory therapy. Thus, a study was designed to evaluate the effect of continuous oxygen therapy as a part of a program of rehabilitation for the pulmonary cripple.

Six patients receiving an active therapeutic program for chronic airway obstruction with and without oxygen formed the group in the study, which was initiated in the hospital. On leaving the hospital, the patients were followed on an outpatient basis for up to 18 months.

All of the patients had long-standing chronic airway obstruction with hypoxemia, cor pulmonale, and secondary erythrocythemia. All were disabled by their disease and had been living an essentially bed-and-chair existence. The patients had the hypoxic-bronchitic clinical type of chronic airway obstruction.

Each patient was hospitalized for two months. Treatment included oral and inhaled bronchodilators, expectorants, diuretics, cardiac glycosides, antibiotics, and other medications as needed. Physical therapy included postural drainage after inhaled bronchodilator and steam, breathing training, and a daily graded exercise program. Management of each patient was continued unchanged during both the control and oxygen therapy months.

## Oxygen By Nasal Prongs

During the first month, oxygen was used only

Bernard E. Levine, M.D.; D. Boyd Bigelow, M.D.; Roger D. Hamstra, M.D.; Henry J. Beckwith, M.D.; Roger S. Mitchell, M.D.; Louise M. Nett, R. N.; Theresa A. Stephen, B. S.; and Thomas L. Petty, M.D. *Annals of Internal Medicine*, April, 1967.

for short periods for severe respiratory distress, its use being carefully monitored. This was the control month. During the second month oxygen was given 24 hours a day, supplied by nasal prongs at controlled flows.

Constant clinical observation was maintained. Exercise tolerance was measured daily during training, which consisted of corridor walks and climbing stairs for two patients, treadmill exercise for the others. Arterial blood gases were tested at least weekly; ventilatory tests were given weekly; resting and exercise steady-state diffusion capacities were performed every two weeks; red cell production was evaluated regularly; and right heart catheterizations were performed at the end of both months in the hospital.

Management of these patients without oxygen was difficult, and in the first month little in the way of rehabilitation could be done.

During the month of oxygen therapy the patients were more comfortable, management of respiratory and cardiac problems was simpler, and active participation in the rehabilitation program was possible in five of the patients. The sixth patient was never well enough to exercise.

Of four patients at home on oxygen by nasal prongs, two have had sustained clinical benefit. Although unable to work, they are both fully ambulatory and able to perform moderate, useful activity. A third did well for a time but later died from respiratory failure. The fourth patient died in respiratory failure 14 months after the study.

## Increased Exercise Ability

Among the patients as a whole, oxygen therapy markedly increased their ability to exercise; lung function was essentially unchanged; there was no significant carbon dioxide retention and no narcosis; and serum bilirubin measurements did not suggest any change in the rate of red cell destruction due to oxygen therapy.

In all patients a potentially reversible vasoconstrictive element in the pulmonary vascular bed was noted at the first catheterization by a

fall in pressure during acute administration of oxygen or tolazoline or both. Giving oxygen during the second catheterization resulted in further lowering of observed pulmonary arterial pressures.

Long-term continuous oxygen therapy caused significant clinical improvement in every patient. Those with initial improvement gained at an accelerated rate, and those with no improvement during the control month achieved a measurable increase in exercise tolerance once oxygen was begun. Viewing each patient as his own control, continuous oxygen appeared to bring demonstrable improvement in every case.

The value of continuous oxygen is further suggested by the fact that on termination of the hospital study all six patients experienced clinical and exercise tolerance deterioration at home on only intermittent oxygen.

In general the potential for physical rehabilitation of these patients was related to the degree of ventilatory impairment measured by spiroometry. Patient motivation and intercurrent illness were other factors. Mechanical lung function did not change with oxygen therapy. The effect of oxygen apparently was simply to relieve the toxic effects of hypoxemia and to support patients in reaching their highest possible level of activity. This type of supportive therapy can make the difference between a bed-bound existence and full activity at and away from home.

### **Effect of Therapy**

Lowering of pulmonary arteriolar resistance after a month of constant therapy is a significant benefit demonstrated by this study. Whatever the mechanism of decreased resistance, the importance of a diminished work load on the right ventricle to the patient with cor pulmonale is apparent.

Hematologic studies showed clear-cut evidence of diminished red blood cell production during oxygen therapy. The hematologic data support the concept that oxygen is an effective therapeutic agent for patients with erythrocytosis secondary to hypoxemia.

Oxygen was found to be safe and well tolerated as well as effective. Oxygen therapy caused no significant alteration in arterial  $\text{PCO}_2$  acutely or chronically. Carbon dioxide retention due to oxygen therapy is rarely seen if dosage is controlled to maintain normal arterial  $\text{PO}_2$ .

Constant use of nasal prongs was well tolerated by the patients. The fact that patients can eat, sleep, and talk while receiving oxygen would appear to make this a reasonable method of delivering continuous therapy.

The data show that relief of hypoxemia is an important step in the rehabilitation of patients with chronic airway obstruction.



#### **Extraosseous Chondrosarcoma of the Maxilla**

R. L. Goldman (4833 Fountain Ave, Los Angeles) and S. L. Perzik *Arch Surg* 95:301-303 (Aug) 1967

The present case is an apparently unique example of an extraosseous chondrosarcoma of the maxilla. The pathological features of the neoplasm are described and illustrated and its histogenesis is discussed. The lesion is presumed to have arisen from gingival mesenchyma or periosteal connective tissue elements that manifested a unilateral propensity to chondroid differentiation. The only form of effective therapy for chondrosarcoma is prompt and radical surgical removal of those lesions that are situated in a location permitting such an approach.

#### **Pelvic Lymphocyst**

A. B. Weingold, E. Olivo, and J. Marino (1249 Fifth Ave, New York) *Arch Surg* 95:304-307 (Aug) 1967

Two cases of pelvic lymphocyst were diagnosed after 128 pelvic lymphadenectomies. Ligature of the lymphatic channels at the limits of dissection may reduce the incidence of this complication. Postoperative lymphangiography is uniquely applicable to the early diagnosis of small asymptomatic lesions and has provided new insight into the question of nodal regeneration. Surgical therapy for symptomatic cases should be limited to unroofing the cyst since excision is hazardous and unnecessary.

## NORTH ARKANSAS CLINIC



W. H. CALAWAY, B. S., M. S., M. D.  
Internal Medicine, Obstetrics

CHARLES TAYLOR, A. B., M. D.  
Internal Medicine

F. Q. WYATT, A. B., M. D., F. I. C. S.  
Gynecology, Obstetrics

JIM E. LYTHE, B. S., M. D., A. A. G. P.  
Internal Medicine

CHANAY TAYLOR, A. B., M. D.  
Internal Medicine

J. F. FARMER, A. B., M. D.  
Internal Medicine

B. G. SMITH, M. D.  
Internal Medicine



Complete Laboratory and X-Ray Facilities

BATESVILLE, ARKANSAS

Phone RI 3-5251

BEN OWENS, Administrator

## AMERICA'S ONLY SPA UNDER FEDERAL REGULATION

Thermal waters owned and controlled by the U. S. Govt. Physicians registered by the U. S. Dept. of Interior, invite recommendations of visiting patients' family physicians. Every facility for complete hydrotherapeutic treatment in 18 well equipped bath houses and the Physical Medicine Center, all operating under Federal regulation. Pure drinking water. Favorable climate. Diversified recreation. Accommodations to suit every taste and budget. For literature address Physicians' Committee, P. O. Box 1140

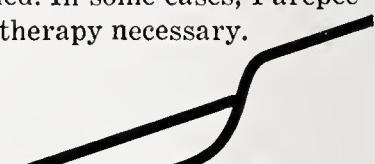
HOT SPRINGS  
National Park  
ARKANSAS



**One by one  
the family's downed  
Because the  
G.I. bug's around**

Parepectolin for quick relief of acute diarrhea  
... soothes colicky pain with paregoric\*  
... consolidates fluid stools with pectin  
... adsorbs irritants with kaolin,  
and protects intestinal mucosa

Whether it's a 24-hour "bug", a food problem, or simply nervousness and anxiety, Parepectolin will bring the diarrhea under control until etiology can be determined. In some cases, Parepectolin may be all the therapy necessary.



# Parepectolin®

Each fluid ounce of creamy white suspension contains:

\*Paregoric (equivalent) ..... (1.0 dram) 3.7 ml.  
Contains opium ( $\frac{1}{4}$  grain) 15 mg. per fluid  
ounce.

*warning: may be habit forming*

Pectin ..... (2½ grains) 162 mg.  
Kaolin (specially purified) .... (85 grains) 5.5 Gm.  
(alcohol 0.69%)

Usual Adult Dose: One or two tablespoonfuls three times daily.

Usual Children's Dose: One or two teaspoons three times daily.



**WILLIAM H. RORER, INC.**  
Fort Washington, Pa.

December, 1967

# THE JOURNAL OF THE Arkansas MEDICAL SOCIETY

Vol. 64 No. 7

FORT SMITH, ARKANSAS

U.C. MEDICAL CENTER LIBRARY

DEC 28 1967

San Francisco 94122



Among the adjuncts to the physician's skill

## Darvon® Compound-65

Each Pulvule® contains 65 mg. propoxyphene hydrochloride, 227 mg. aspirin, 162 mg. phenacetin, and 32.4 mg. caffeine.

Lilly

Additional information available to the medical profession upon request.  
ELI LILLY AND COMPANY, INDIANAPOLIS, INDIANA 46206  
701133

# Dilantin®

(diphenylhydantoin)

PARKE-DAVIS

**In untold thousands of  
epileptic patients...  
Dilantin has been, and  
continues to be, the  
bedrock of therapy.**

DILANTIN is useful in the treatment of grand mal epilepsy and certain other convulsive states. Its use will prevent or greatly reduce the incidence and severity of convulsive seizures in a substantial percentage of epileptic patients, without the hypnotic and narcotizing effects of many anti-convulsant drugs.

**PRECAUTIONS:** Periodic examination of the blood is advisable. Nystagmus in combination with diplopia and ataxia indicates dosage should be reduced. The possibility of toxic effects during pregnancy has not been explored.

**ADVERSE REACTIONS:** Allergic phenomena such as polyarthropathy, fever, skin eruptions, and acute generalized morbilliform eruptions with or without fever. Rarely, dermatitis goes on to exfoliation with hepatitis, and further dosage is contraindicated.

Gingival hypertrophy, hirsutism, and excessive motor activity are occasionally encountered. During initial treatment, side effects may include gastric distress, nausea, weight loss, nervousness, sleeplessness, feeling of unsteadiness. Macrocytosis, megaloblastic anemia, leukopenia, granulocytopenia, thrombocytopenia, pancytopenia, agranulocytosis, and aplastic anemia have been reported. Nystagmus, lymphadenopathy, lupus erythematosus, erythema multiforme (Stevens-Johnson syndrome), and a syndrome resembling infectious mononucleosis with jaundice have occurred.

DILANTIN is supplied in several forms including Kapseals® containing 0.1 Gm. and 0.03 Gm. diphenylhydantoin sodium.

Parke, Davis & Company, Detroit, Michigan 48232

The color combinations of the banded capsules are Parke-Davis trademarks. The orange-banded white capsule identifies Parke-Davis 0.1 Gm. diphenylhydantoin sodium; the pink-banded white capsule 0.03 Gm. diphenylhydantoin sodium.

**PARKE-DAVIS**

015R67

# *Lutrexin*<sup>®</sup>

**HW&D BRAND OF LUTUTRIN**

**3000 UNIT TABLETS**

**IN THE TREATMENT OF FUNCTIONAL DYSMENORRHEA AND SELECTED CASES OF  
PREMATURE LABOR AND 2ND AND 3RD TRIMESTER THREATENED ABORTION**

- LUTREXIN, the non-steroid "uterine relaxing factor" has been found to be useful by many clinicians in controlling abnormal uterine activity.
- Literature on indications and dosage available on request.
- No side effects have been reported, even when massive doses (25 tablets per day) were administered.
- Supplied in bottles of twenty-five 3,000 unit tablets.



(In vivo measurement of Lutrexin on contracting  
uterine muscle of the guinea pig.)

**HYNSON, WESTCOTT & DUNNING, INC.**

(LTR23)



BALTIMORE, MARYLAND 21201

**THE  
JOURNAL OF THE  
Arkansas  
MEDICAL SOCIETY**

Owned by

**THE ARKANSAS MEDICAL SOCIETY**

**And Published Under Direction of the Council**

**ALFRED KAHN, JR., M.D., Editor**  
**1300 West Sixth Street Little Rock, Arkansas**  
**MR. PAUL C. SCHAEFER, Business Manager**  
**218 Kelley Bldg. Fort Smith, Arkansas**  
**LITTLE ROCK BUSINESS OFFICE**  
**114 E. Second St. Little Rock, Arkansas**

**OFFICERS OF THE ARKANSAS MEDICAL SOCIETY**  
JOSEPH A. NORTON, President ..... Little Rock  
H. W. THOMAS, President-Elect ..... Dermott  
JEROME LEVY, First Vice President ..... Little Rock  
DAVID H. PONTIUS, Second Vice President ..... West Memphis  
GEORGE F. WYNNE, Third Vice President ..... Warren  
ELVIN SHUFFIELD, Secretary ..... Little Rock  
W. R. BROOKSHER, Secretary Emeritus ..... Fort Smith  
BEN N. SALTZMAN, Treasurer ..... Mountain Home  
JOHN P. PRICE, Speaker, House of Delegates ..... Monticello  
AMAIL CHUDY, Vice Speaker,  
House of Delegates ..... North Little Rock  
ALFRED KAHN, JR., Journal Editor ..... Little Rock  
JAMES M. KOLB, SR., Delegate to AMA ..... Clarksville  
JACK KENNEDY, Delegate to AMA ..... Arkadelphia  
C. C. LONG, Alternate Delegate to AMA ..... Ozark  
ALFRED KAHN, JR., Alternate Delegate to AMA ..... Little Rock  
MR. PAUL C. SCHAFFER, Executive Vice President,  
P.O. Box 1208 ..... Fort Smith

**COUNCILORS**

First District	ELDON FAIRLEY	Osceola
	B. P. RANEY	Jonesboro
Second District	PAUL GRAY	Batesville
	HUGH R. EDWARDS	Searcy
Third District	PAUL MILLAR	Stuttgart
	L. J. P. BELL	Helena
Fourth District	T. E. TOWNSEND	Pine Bluff
	ALPERT W. LAZENBY	Dumas
Fifth District	KENNETH R. DUZAN	El Dorado
	PAUL SIZEMORE	Magnolia
Sixth District	KARLTON H. KEMP	Texarkana
	JOHN P. WOOD	Mena
Seventh District	JACK KENNEDY	Arkadelphia
	ROBERT F. McCRARY	Hot Springs
Eighth District	WILLIAM PAYTON KOLB	Little Rock
	JAMES R. MORRISON	Little Rock
Ninth District	STANLEY APPLEGATE	Springdale
	ROSS FOWLER	Harrison
Tenth District	C. C. LONG	Ozark
	A. S. KOENIG	Fort Smith

The Advertising policy of this JOURNAL is governed by the PRINCIPLES OF ADVERTISING of the State Medical Journal Advertising Bureau, Inc., by the Advertising Committee of the Bureau and by the Council of the Arkansas Medical Society.

*EXCLUSIVE PUBLICATION—Articles are accepted for publication on the condition that they are contributed solely to this JOURNAL.*

*COPYRIGHT 1967 — By the JOURNAL of the Arkansas Medical Society.*

*NEWS—Our readers are requested to send in items of news, also marked copies of newspapers containing matter of interest to the membership.*

**SCIENTIFIC ARTICLES**

- Computers as Logical Manipulators of Models of Medical Problems ..... 245  
*John M. Long, Ed.D.*

- Carotid Occlusions Intentional and Spontaneous ..... 248  
*Stevenson Flanigan, M.D., William J. German, M.D., and Samuel P. W. Black, M.D.*

- Massive Pulmonary Embolism—Case Report ..... 251  
*R. B. Robins, M.D., F.A.C.S.*

**FORUM FROM THE DEPT.  
OF OBGYN**

- The Role of Subtotal Hysterectomy In Modern Gynecology ..... 253  
*Ralph H. Jennings, M.D.*

**FEATURES**

- What Is Your Diagnosis? ..... 256  
Electrocardiogram ..... 257  
Arkansas Public Health at a Glance ..... 258  
Editorial ..... 260  
Medicine in the News ..... 262  
Announcements and Things to Come ..... 265  
Personal and News Items ..... 265  
Proceedings of Societies ..... 267  
New Members ..... 267  
Book Review ..... 267  
Tuberculosis Abstracts ..... 269

# Computers As Logical Manipulators\* of Models of Medical Problems

John M. Long, Ed.D.\*\*

## I. Introduction

The purpose of this paper is to discuss the use of a computer to assist in logical decision problems and in model building. Many people assume that the computer is a glorified adding machine. This is not quite the case since a computer, in its most basic form is a *logic* machine. Mr. Joseph Weizenbaum of Massachusetts Institute of Technology, gives the point of view of this paper quite well by saying of computers, "I start by pointing out that the computer is a symbol manipulation device and that arithmetic is a small subset of symbol manipulation".<sup>1</sup> This point will be illustrated by discussing two projects assisted by the University of Arkansas Medical Center's Research Computation Laboratory. Again, the point to be made is that computers are really logic machines and they can perform any operation which can be organized as a logical sequence of events.

## II. Pre-diagnosis in Dermatology

The first example illustrates the logical decision idea. It is a project designed to use a computer to assist in pre-diagnosis in Dermatology. Emphasis is on *pre*-diagnosis. Dr. Richard V. Ebert, former Professor and Head, Department of Medicine, first suggested the project. Later Dr. Calvin Dillaha, Head, Division of Dermatology, became interested in its use in Dermatology and the laboratory staff are now assisting Dr. Dillaha in this project.

Essentially, at present, the work done by Dr. Arthur L. Norins,<sup>2</sup> is being duplicated, evaluated and expanded. Other logical organizations of the diagnostic process will be tested after his approach is carried as far as seems practical. Mrs. Trudie Levy, Senior Programmer, has done the programming.

Figure 1 illustrates the format for insertion of data describing the attributes of various diseases. A total of 191 attributes are evaluated for each disease. The different characteristics are assigned a value from -3 to +3 based on the "correlation" of the attribute with the disease. A +3 is assigned if there is a strong relationship between the symptom and disease, a +1 if the relationship is weak, a zero if there is no relationship, etc. The minus values indicate an inverse relationship, that is, the presence of the symptom means the disease does not exist. Using this format a medical student, Raymond V. Biondo, has prepared about one hundred fifty diseases this summer for the system with Dr. Dillaha supervising his work.

After this *basic* data is stored in the computer the symptoms observed in a specific case are inserted. The format for this is illustrated in Figure 2. The observer simply checks the "yes" or "no" column indicating the presence or absence of that particular symptom. This data is fed into the pre-diagnosis system.

The logic of the system is illustrated in Figure 3. Essentially what is done is the symptom pattern is compared with each of the diseases and a probability of that disease being present is computed. The ten highest probabilities are then printed out for the doctor's further consideration. Several cases have been run through the system and our preliminary results are quite satisfactory. The correct diagnosis was found in each case, but the program does not discriminate as well as it will when it has more data to use in the decision process.

To pre-diagnose three things are needed. First, a diagnostician with great insight so that he can outline the logical sequence of events that take place. Second, a programmer smart enough to interpret this in a computer program and, finally, the data needed by the computer to make the logical decisions. It will be a very long time, if ever,

\*Assistance was provided for this research by the University of Arkansas Medical Center Research Computation Laboratory which is supported by NIH Grant FR 00208-01.

\*\*University of Arkansas School of Medicine, 4301 West Markham, Little Rock, Arkansas.

before a computer will do complete and practical diagnosing, but technology now exists for its use as a very valuable assistant. Another point should be made here also. Attempts such as this to analyse the diagnostic process carry a very valuable fringe benefit. The work going into the study and analysis often bring greater insight to the diagnostician whether he does or does not use the computer in his practical day to day work.

As the project develops further, the most basic changes needed are in the logic. If diagnosis is a logical procedure a computer can diagnose, or if a part of it is a logical procedure, a computer can perform that part. It is uncertain as to how much of the diagnostic process can be stated as a logical sequence (thus the term "pre-diagnosing") but a large part of diagnosing must be logical and the goal is to capture in the program that part which is logical.

It is obvious that a computer is needed to perform the logical manipulations. The arithmetic involved is tedious but trivial. The first program, which was written in FORTRAN, took about fifteen minutes to do one pre-diagnosis. This is too long. The project is still being developed and improved. The latest program, written in AUTOCODER, takes less than one minute.

### III. PERT/CPM in Complex Medical Procedure

The second example selected to illustrate the point about logic involves an evaluation by Dr. William J. Flanigan, Assistant Professor of Medicine, and myself of the so called PERT/CPM<sup>3</sup> techniques for their possible use in complex medical procedures such as in organ transplants. The technique has been applied in retrospect to the living donor renal transplant procedure to see if it might have helped in initial planning. There is now little doubt that it will be useful in planning future organ transplant procedures.

PERT stands for Program Evaluation and Review Technique. It was originated in 1958 by the Navy in connection with the Polaris Missile System. PERT is credited with helping to shave two years from the time originally considered necessary to make Polaris operational. PERT is now used in most major missile, space and weapon systems and is also used in construction, building and other projects.

The Navy defines PERT as a method of effective scheduling of events for maximum efficiency; that is, it is a tool for coordinating complex programs. The primary requirement in PERT is a

*network*. A network is a flow chart of all activities and events that must be completed or accomplished to reach program objectives. The network must show the planned sequence of accomplishments, interdependencies and interrelationships.

The second requirement for PERT after the network is established are *time estimates* of activities in the network. Three time estimates are required: an optimistic time, a pessimistic time, and a most likely time. An expected time is computed from these by the simple formula:

$$\frac{t_e = a + 4m + b}{6}$$

Figure 4 gives one page from our list of activities and the computed value of the expected time.

Perhaps the most significant results of PERT is finding the *critical path* on the network. The critical path is the path that represents the greatest amount of elapsed time required to proceed from the start to the end of the network. In other words, the critical path is the longest path in the network in terms of time. A delay along the critical path causes a corresponding delay in the network and event time, that is, it increases the total time for the process to be completed.

Figure 5 presents a small segment of our network on a time base of five minute intervals. This segment is about 10% of the full network developed which in turn represents only the morning of the operation. As previously indicated any delay along the critical path, represented by the heavy solid line, will cause the total time to increase by the amount of time of the delay.

An events *earliest start time* is calculated by adding the expected elapsed time ( $t_e$ ) to the previous event's earliest start time. (Project starts at time zero,  $\emptyset$ ). The sum of expected elapsed times is added along a continuous path of activities. If two activities must be completed before a third activity may start, its earliest start time will be the larger of the two times. The *earliest finish time* for an event is the earliest start time plus the expected elapsed time. In most cases it is the following events earliest start time. The *latest start time* is the time by which an event must start without delaying the final completion time. It is calculated from the last event by subtracting the expected elapsed time of the last activities from project completion time. Each latest start time is calculated by subtracting the expected time ( $t_e$ ) from the previous event's latest start time. When

two activities start at one event its latest start time is the smaller of the two times. The *latest finish time* is the latest start time plus the expected time ( $t_e$ ).

On the critical path the earliest start time equals the latest start time and the earliest finish time equals the latest finish time.

The difference between the latest finish time and the earliest finish time is "slack". Slack is a measure of the time available or needed to bring the total project back on schedule.

Results so far have been very encouraging. The next step will be to apply PERT to the cadaver donor case and then, perhaps, develop a network

for another organ transplant being considered by our Clinical Research Laboratory.

In summary, you will note that the arithmetic is trivial but the logical shuffling of events and times to find the critical path and other information requires a computer in all but very small networks.

#### REFERENCES

1. Weizenbaum, Joseph, The Rand Symposium, *Datamation*, 11: pp. 27, August, 1965.
2. Norins, Arthur L., Computers in Dermatology, *Archives of Dermatology*, 90:506-511 (Nov.) 1964.
3. Hansen, B. J., *Practical Pert*, Washington, D.C., American House 1964.



#### **Byssinosis in the United States**

A. Bouhuys et al (Yale Univ School of Medicine, New Haven, Conn) *New Eng J Med* 277:170-175 (July 27) 1967

Respiratory disease was studied in 22 US cotton mill workers in three southern states. All 14 cardroom workers seen had symptoms of byssinosis. Nine (64%) were respiratory cripples (dyspnea grade V); nine (64%) had a forced expiratory volume (one second) of less than 50% of expected. None of eight workers in other cotton mill operations (mainly weaving) had symptoms of byssinosis. An acute effect of cotton dust inhalation on ventilatory capacity (FEV<sub>1</sub>) was demonstrated in two cardroom workers and in two healthy subjects. The results indicate, in conjunction with previous experience in other countries, that byssinosis may be much more prevalent in US cotton workers than has been suspected in the past. Epidemiological studies to ascertain its prevalence are urgently needed.

#### **Postpartum Death With Maternal**

#### **Congenital Heart Disease**

R. L. Naeye et al (Medical Alumni Bldg, Univ of Vermont, Burlington) *Circulation* 36:304-312 (Aug) 1967

Four women with congenital heart disease, who died following parturition, were studied. All had malformations which permitted large post-tricuspid shunts. Two women had ventricular septal defects, another a large patent ductus arteriosus, and the last a large Blalock anastomosis. All had advanced pulmonary arterial lesions before delivery. In the intrapartum or early postpartum period widespread fibrin and platelet thrombi occluded already narrowed pulmonary arterial channels increasing right-to-left cardiac shunts. This increase of pulmonary vascular resistance led to death. The etiology of the preterminal thrombotic disorder has not been established in any of the cases.

# CAROTID OCCLUSIONS INTENTIONAL & SPONTANEOUS\*

Stevenson Flanigan, M.D., William J. German, M.D., and  
Samuel P. W. Black, M.D.

For over a decade there has been a remarkable interest and therapeutic activity in the field of spontaneous extracranial occlusive cerebrovascular disease. Major emphasis has been directed toward the carotid arteries, the arteries of "deep sleep" of the ancient Greeks, normally responsible for about two-thirds of the blood supply to the brain. For about the same period, we have had the opportunity of observing a group of 35 patients following intentional surgical occlusion of the common or internal carotid for the treatment of intracranial carotid aneurysms, during the interval 1936 to 1953.<sup>1</sup> This extended follow-up, in addition to other patients in whom the carotid circulation was of surgical interest, form a basis of about 100 cases for this condensed report.

Ligation of one internal carotid artery was usually well tolerated in patients under 40, when done with local anaesthesia and preceded by trials of digital compression up to 15 minutes. Single-stage internal carotid ligation is *not* recommended in patients over 40. Common carotid ligation was uneventful in most instances, when done under similar circumstances, even up to age 75 in one case. However, several patients developed evidences of cerebral ischemia during trial occlusion of the common carotid. The symptoms were usually immediately reversible, though one patient sustained a prolonged monoparesis, thought to be the result of an embolus. When complete occlusion was not tolerated, imbrication of the arterial wall or application of a specially designed clamp for gradual occlusion became the method of treatment. It is emphatically recommended that procedures designed to occlude the carotid arteries, either internal or common, be done under *local* anaesthesia. If suitable precautions are observed, it may be feasible to perform staged *bilateral* occlusive operations on the common carotids, for bilateral aneurysms, as occurred in two cases of our experience, or for carotid-cavernous fistulae. The latter has been reported 37 times, as collected in a recent monograph by Pool and

Potts,<sup>4</sup> the first being by Williams in 1868, and there is one report of bilateral *internal* carotid occlusion by Hamby and Gardner<sup>3</sup> in 1933.

Returning to our aneurysm experiences, 11 of the 35 patients in the extended follow-up series have survived to age 60 or beyond, five of them having passed 70, and three exceeded 80. It is apparent that occlusion of a carotid artery need not be a life-shortening event. One patient in this group had temporary hemiparesis associated with carotid compression. Another suddenly became hemiparetic two years after internal carotid ligation, presumably due to an embolus from the ligation site. A third patient died at age 81, twenty years after common carotid ligation, from propagating thrombosis of the opposite carotid, arising



Figure 1.

Residual stenosis of the common carotid 22 years after "ligation" for an aneurysm at the posterior communicating artery.

\*Department of Surgery, University of Arkansas Medical Center, Little Rock, Arkansas; Yale University School of Medicine, New Haven, Connecticut, and University of Missouri, Columbia, Missouri.

in a mirror aneurysm on that artery. It appears that the hazard of late cerebrovascular deficit resulting from intentional carotid occlusion is slight.

Through the years it has become evident that ligation-in-continuity does not always accomplish the exact and intended. Example: Because of faulty communications, two adjacent ligatures were applied to the common carotid; a local wound infection persisted and the patient finally presented us with the two braided silk sutures, their knots still secure; occlusion was obviously complete, but no longer in continuity. Another patient had the *common* carotid properly ligated; reinvestigation ten years later disclosed continuous occlusion up the *internal* carotid. Contrarywise, review after 22 years in another case, showed only narrowing at the ligation site (Fig. 1.).

Collateral circulation, the crucial factor in all arterial occlusions, is chiefly through the following channels: Extracranial: External carotid branches from one side to the other; external to carotid at the bifurcation by the reverse flow; verte-

bral to carotid by occipital. Intracranial connections are: One side to the other by way of the circle of Willis, especially the anterior communicating; vertebral to carotid through basilar, posterior cerebral and posterior communicating; also occasionally through a persistent trigeminal artery joining the two systems; external to internal carotid by reverse flow in the ophthalmic. The sometimes tenuous dependence upon collateral circulation is illustrated by a patient who was allowed to sit in bed shortly after ligation of the common carotid. She became unconscious, but recovered when placed in the head-down position and given inhalation of 5 per cent carbon dioxide. It was several weeks before she could sit without dimness of vision in the homolateral eye. Several years later she developed hypertension and similar visual impairment returned when medical measures were used to reduce her blood pressure.

An unexpected late effect of carotid ligation is a tendency toward slight *increase of intraocular pressure*, in the presence of *reduced retinal arterial pressure*.<sup>2</sup> The resultant low working-pressure



Figure 1.

Figure 2.  
Stenosis and mild post-stenotic dilatation in a left internal carotid artery accompanied by a loud bruit in the region of the bifurcation. The print to the right shows the reconstitution of the caliber of the lumen with endarterectomy.

in the retinal circulation may produce a glaucoma-like effect.

Undoubtedly, some of these observations following *intentional* carotid occlusions have a bearing on the problems of *spontaneous* occlusions. The latter tend to occur in a setting of occlusive vascular disease, as illustrated in the following example. A dentist of 64 had noted a tendency to drop his dental mirror for several days before the onset of confusion and left hemiparesis. Within the same year he had required a lumbar sympathectomy for the relief of intermittent claudication due to superficial femoral occlusion, and E.C.G. indicated a previous myocardial infarction. The right carotid bifurcation was still and silent, the left the site of a loud bruit. Realizing the hazard of converting an anemic cerebral infarct into a hemorrhagic one, surgery was delayed for six weeks, when left carotid endarterectomy was accomplished without incident. In this case the complete right carotid occlusion became symptomatic only when collateral from the other side was threatened.

A bruit at the common carotid bifurcation is often the indication of impending trouble and routine application of a stethoscope to this region can be quite rewarding. The "whistler" (Fig. 2.) typically includes a zone of narrow lumen with a little post-stenotic dilatation where turbulence occurs. Rarely a bruit may occur where smaller collateral channels deliver blood at high velocity into a large channel. Thus, a man of 56 became aware of a "whistle" in the region of his left eye, six years after the onset of progressive right lower monoparesis. Collateral circulation through the left orbit was so good that internal carotid occlusion at the base of the skull was not originally detected. Now at 75, this patient has had no further cerebrovascular problems.

Not all spontaneous carotid occlusions occur extracranially and in senior citizens. A five and

one-half year old boy developed right hemiplegia as he ran toward his mother and collapsed in her arms. His carotid was occluded distal to the ophthalmic, but adequate collateral through the anterior communicating permitted complete recovery.

Finally, in our eagerness to discover major problems we sometimes overlook less dramatic entities. A retired surgeon of 76 began to have episodes of light-headedness, grayouts, and disturbance of equilibrium, especially, when bending over to pick up a golf ball. Extensive investigation elsewhere, including four-vessel angiography, resulted in a diagnosis of intracranial vascular insufficiency. Identification of a hypersensitive right carotid sinus, with appropriate reproduction of symptoms, led to effective treatment with belladonna and ephedrine.

Although this discussion is limited to carotid occlusions, similar problems in the vertebral circulation must also be considered. For a thoughtful review of the general subject of extracranial cerebrovascular disease, the article by Stansel and Cahow,<sup>5</sup> in Annual Review of Medicine, 1965, is recommended. Our own conclusions must be that neither diagnosis nor treatment should be stereotyped but rather individualized for each patient.

#### REFERENCES

1. German, W. J., and Black, S. P. W. Cervical Ligation for Internal Carotid Aneurysms. *J. Neurosurg.* 23:572-577, 1965.
2. German, W. J., Flanigan, S., and Black, S. P. W. Retinal Circulation Following Carotid Ligation. *Trans. Am. Neur. Ass.* 88:69-72, 1963.
3. Hamby, W. B., and Gardner, W. J. Treatment of Pulsating Exophthalmos with Report of Two Cases. *Arch. Surg.* 27:676-685, 1933.
4. Pool, J. L., and Potts, D. G. Aneurysms and Arteriovenous Anomalies of the Brain. Harper and Row, New York. 1965. 463 pp.
5. Stansel, H. C., Jr. and Cahow, C. E. Extracranial Cerebrovascular Disease. *Annual Review of Medicine.* Ed. by Arthur C. DeGroff. Annual Reviews, Inc., Palo Alto. 1965 P.p 331-344.



# MASSIVE PULMONARY EMBOLISM

R. B. Robins, M.D., F.A.C.S.\*

Around midnight on July 22, 1966 the author was called to the apartment of Miss W. A. W., aged fifty-two, who was complaining of real severe pain in the left lower chest area. She was in great distress and could not lie down because of the extreme discomfort of the chest pain. Blood pressure was 156/104; pulse 90; respirations 24; no fever. Chest examination was unrevealing as well as abdominal examination. She was given 100 mg. Demerol by hypo for relief. The next morning she was better and returned to her work.

On July 30, 1966, she was admitted to the hospital because of recurrence of the chest pain and a dry, hacking cough. Temperature was normal; blood-pressure was 140/90; blood examinations were in normal range. Chest examination was essentially unrevealing except there were diminished breath sounds in the left lower lung field posteriorly. She was seen in consultation by Dr. S. Nigro, a thoracic surgeon. X-ray examination revealed a localized zone of patchy density occupying the left costophrenic angle and was best seen in the lateral view of the chest. On the PA the left costophrenic angle was blunted. The conclusion was left lower lobe consolidation either due to pneumonia or to pulmonary embolism. It was the feeling of the author and the consultant that we were dealing with an atypical pneumonia probably. She was discharged from the hospital on August 10, 1966, improved, and returned to work.

On September 30, 1966 the patient collapsed on the street while walking to her apartment house and was transported to the hospital by ambulance. She was in peripheral vascular collapse, with no blood pressure and very obvious cyanosis. The neck veins were engorged; she showed evidence of severe respiratory deficiency.

The impression was either pulmonary embolus or myocardial infarct. She was given Aramine intravenously, which gave her a blood pressure of approximately 50-60 mm. of mercury. The x-ray of her chest showed no consolidation in either lung field. The lung scan showed practically no perfusion in either lung, with a very small amount of perfusion in the right lower lobe.

She was then taken to the cardiac catheterization room; a catheter was inserted into a vein of the right arm, passed into the right ventricle, and an angiogram was taken which showed complete obstruction of the left pulmonary artery, marked obstruction of the right pulmonary artery, with a filling defect suggesting a floating clot in the right pulmonary artery. During this time her blood pressure was approximately 60 mm. mercury. She was transported immediately to the operating room where, under local, the femoral vein and artery on the right side were cannulated and she was put on partial by-pass with the rotating disc oxygenator. While she was on partial by-pass the chest was prepared and draped; the mediastinum was entered through a sternal-splitting incision (Surgeon, Dr. Arthur DeBoer); the pericardial sac was opened. The right heart was exceedingly tense and further by-pass was accomplished by passing a catheter into the right atrium.

On complete by-pass the pulmonary artery was opened and a large organized thrombus was removed from the left pulmonary artery with very little retrograde clot; a similar thrombus was removed from the right side and its distal end had a bifurcation suggesting a cast of the vena cava. There was also very little retrograde clot in the right lung. She had a practically non-contracting right ventricle and, therefore, was immediately digitalized. With the aid of digitalis some contraction was obtained. It was felt that she would tolerate no further surgery and, therefore, the vena cava was not ligated at this time.

Her convalescence was one of gradual improvement and approximately forty-eight hours after surgery was doing very well. She continued to improve and one week following surgery the vena cava was ligated with no problem. The convalescence following the vena cava ligation continued and she was discharged on the 21st postoperative day. Her repeat lung scan was perfectly normal. She is on coumadin and will continue it for an indefinite period of time.

## Comments on Pulmonary Embolism

Pulmonary embolism has a continuing very high incidence. It is found in about 10% of all autopsies and causes two-to-three per cent of deaths. A high percentage come from phlebo-

\*Chicago, Illinois.

R. B. Robins, M.D., F.A.C.S., 300 No. State Street, Chicago, Illinois. Former president, Arkansas Medical Society; former vice-president and member of Board of Trustees, American Medical Association.

thrombosis in the extremities and about 10 percent from thrombophlebitis. An embolism may be of any size, from microscopic to a huge long "saddle" embolism that lands astride the pulmonary artery bifurcation. Emboli may be single or multiple.

Ordinarily leg signs of deep venous thrombosis plus pleuritic pain, hemoptysis and friction rub become strong diagnostic points for pulmonary embolism. In major silent embolism the onset of profound weakness, painless dyspnea, or unexplained low blood pressure may be the only clue.

#### Serum Enzymes

Serum enzyme determinations have become important in the diagnosis of pulmonary embolism. Within six to twenty-four hours of pulmonary embolism the serum LDH activity is elevated in 90% of the cases. SGOT usually remains normal in a large majority of the cases. Elevated serum LDH activity not otherwise explained may be valuable laboratory evidence of the diagnosis of pulmonary embolism. Normal values range from two hundred to six hundred and eighty units.

#### Angiography

Angiography is relatively safe. The catheter tip must be advanced into the main pulmonary

artery to obtain sufficiently clear visual delineation. Through serial exposures valuable information may be obtained in regard to embolic phenomena by the angiographic examination. They are particularly valuable in major or massive embolism. This diagnostic modality has been a great contribution to diagnosis in this area in the past few years. Note the value of it in the preceding case report.

#### Treatment

Anticoagulant therapy is important. Patients are usually treated for eight-to-ten days with Heparin and a follow-up treatment for an indefinite period of time with Coumadin.

Venous interruption is important. This means either common femoral or caval ligation. Vena caval ligation prevents embolism in nearly ninety-eight per cent of the cases.

Removal of massive pulmonary emboli is becoming a more frequent procedure. In our case the promptness of the diagnosis, the promptness of surgery, and the use of the pump bypass were very important aspects of the management. Inferior vena caval ligation is also a very important part of the procedure.



#### Needle Tracheostomy: Further Evaluation

R. K. Hughes, C. Davenport, and H. Williamson  
(Univ of Utah School of Medicine, Salt Lake City) *Arch Surg* 95:295-296 (Aug) 1967

Size 13 needle tracheostomy and complete occlusion of the cervical trachea during spontaneous respiration of room air for one hour was well tolerated by ten dogs weighing 25 lbs or less. Hypotension, severe acidosis, or hypercapnia did not occur. Po<sub>2</sub> fell below 70 mm Hg in four dogs but not below 55, and behavior and health appeared normal during two weeks' observation. On the basis of physiological data, size 13 needle tracheostomy, with acute obstruction of the upper airway, may temporarily restore an airway to the infant, but not to the child or adult.

#### Unusual Complications of Mercurial (Cinnabar) Tattoo

L. Biro and W. P. Klein (Downstate Medical Center, 450 Clarkson Ave, Brooklyn, NY) *Arch Derm* 96:165-167 (Aug) 1967

A 26-year-old male patient with a mercurial tattoo is presented. The patient has had this tattoo for nine years and following a minor laceration at work, a generalized eczematous eruption ensued. The various mechanisms of sensitization to mercury from asymptomatic tattoos are discussed and the authors conclude that the laceration was most likely responsible for precipitating a generalized sensitization in the present case. Compensability was established and the tattoo was excised with skin graft repair. The patient remained asymptomatic.



STUDIES FROM  
THE UNIVERSITY OF ARKANSAS MEDICAL CENTER  
THE DEPARTMENT OF

# OBSTETRICS AND GYNECOLOGY

WILLIS E. BROWN, M.D., Professor and Chairman  
STACY R. STEPHENS, M.D., EDITOR

## The Role of Subtotal Hysterectomy in Modern Gynecology\*

Ralph H. Jennings, M.D.\*\*

For many years subtotal hysterectomy was the standard treatment for all benign uterine diseases. As modern advances were made in anesthesia, antibiotic therapy, blood transfusion, and operative care, there was a gradual change from subtotal to total hysterectomy. Following much discussion, concerning the relative merits and safety of the two procedures,<sup>6, 8, 11, 16-20, 22, 24-26, 28-30, 32-34</sup> it is now generally agreed that total hysterectomy is the procedure of choice, unless a definite contraindication to the total operation exists<sup>21, 23, 25, 26, 27, 31, 33</sup>. These contraindications are variable but may be grouped into three broad categories: advanced pelvic malignancy; severe medical illness demanding a brief operative procedure; and technical surgical problems which would unduly prolong the procedure or significantly increase the risk of blood loss or damage to vital organs. Of course, in many cases, a combination of the above influences the surgeon to select subtotal hysterectomy.

It is the purpose of this paper to delineate the role of subtotal hysterectomy in modern gynecology, to mention situations where this procedure is the treatment of choice, to review the cases of subtotal hysterectomy done at the University of Arkansas Medical Center, and to outline the careful follow-up that is mandatory for the surgeon who elects to perform the incomplete or subtotal hysterectomy.

### MATERIAL

Review of 2,049 patients undergoing abdominal hysterectomies at the University of Arkansas

Medical Center between January, 1952 and June, 1967 showed eighty-two subtotal operations, an incidence of 4.0 per cent. Patients were evaluated as to operative indications, indications for subtotal hysterectomy, and complications of surgery.

TABLE I  
INDICATIONS FOR SURGICAL  
EXPLORATION

	No. Patients
Abdominal mass	32
Pelvic mass	13
Myoma	14
Ruptured uterus	7
Ectopic pregnancy	3
Tubo-ovarian abscess	3
Intestinal obstruction	2
Acute abdomen	2
Wound dehiscence	1
Placenta accreta	1
Uterine decensus	1
Infected uterus	1
Uterine sarcoma	1
Sterilization	1
TOTAL	82

### RESULTS

Table I shows indications for the initial surgical exploration. These patients with advanced or complicated diseases are typical of those routinely referred from throughout the state to our Gynecology Department at the University of Arkansas Medical Center.

\*From the Department of Obstetrics and Gynecology, University of Arkansas Medical Center.

\*\*Arkansas Children's Hospital, Little Rock, Arkansas.

Indications for subtotal hysterectomy are listed

TABLE II  
INDICATIONS FOR SUBTOTAL  
HYSTERECTOMY

	No. Patients
Poor patient condition	25
Technical difficulty	20
Technical difficulty and poor patient condition	9
Malignancy	24
Elective	4
<b>TOTAL</b>	<b>82</b>

in Table II. Poor operative risks and/or technical difficulty were encountered in fifty-four patients. Pelvic malignancy, usually ovarian in origin, was noted at laparotomy in twenty-four patients. In four instances the operation was elective. Six of the above hysterectomies were done for reasons other than carcinoma, but operative specimens showed malignancy.

To reduce the possibility of future cervical carcinoma in the fifty-two patients with benign disease therapeutic cervical care was instituted. Twenty-two patients had a conization before leaving the hospital and eight returned for subsequent conization. Six patients later had a trachelectomy.

TABLE III  
POSTOPERATIVE COMPLICATIONS

	No. Patients
Urinary tract infections	8
Pelvic infection or abscess	7
Urinary complications	4
Hemorrhage	5
Pulmonary complications	7
Dehiscence	2
Bowel fistula	1
Temperature greater than 100.4° for two days	40

Operative complications were varied and frequent since most patients had advanced disease and malignancy. Table III. Urinary complications included four patients exhibiting between them a uretero-vaginal fistula, hydronephrosis, angulated ureter, and bladder atony. No deaths were recorded.

### DISCUSSION

Review of the recent literature on hysterectomy has found most authors insisting on total rather

than subtotal excision of the cervix. No specific reference mentions the use of subtotal hysterectomy in patients with pelvic malignancy. For a number of years, in our patients with advanced ovarian carcinoma, we have performed the subtotal operation and allowed the cervix to remain as a "plug" to prevent vaginal metastases with their resultant hemorrhage, discharge, and foul odor. These individuals have remained more comfortable during their terminal periods. In our series of thirty patients treated thusly, there was only one instance of vaginal metastasis.

Although the incidence of carcinoma in the retained stump is not extremely high; most authors report one per cent to two per cent but some have noted an incidence of 4 per cent<sup>8, 16, 28, 34</sup>; it is imperative that a close follow-up or definite therapy be instituted at an early date.<sup>3, 27, 31</sup> Some gynecologists prefer trachelectomy as soon as the patient's condition warrants.<sup>31</sup> However, by using the Papanicolaou smear and cervical conization, total removal of the cervix can be reserved for cases in which some other condition requires pelvic surgery. When one considers that of fifty-two patients who had benign disease only twenty returned for more than two follow-up visits and fourteen failed to return for any postoperative check it can be readily seen that the initial care of the retained stump must be done while the patient is still in the hospital. This initial step is frequently therapeutic as well as diagnostic. If conization should reveal malignant change then appropriate therapy can be instituted without delay. If the conization specimen is entirely benign then follow-up consisting of Papanicolaou smears is adequate.

Again it should be mentioned that subtotal hysterectomy is not frequently our operation of choice. Only eighty-two have been done in the past 15 years at the University of Arkansas Medical Center. This averages 5.3 per year. However, if the thirty cases of malignancy were excluded then an average of only 3.4 subtotal hysterectomies per year were done for benign disease. These were usually limited to difficult cases such as abdominal pregnancies, tubo-ovarian abscesses with dense adhesions, or unusually heavy bleeding.

### SUMMARY

Eighty-two subtotal hysterectomies were performed during a 15½ year period at the University of Arkansas Medical Center, an incidence of 4.0 per cent of all hysterectomies. The indications

for this operation included poor patient condition, technical difficulty, and advanced ovarian malignancy. Because of the underlying indications operative complications were high. Our use of this operation in patients with ovarian carcinoma and the care of the retained cervical stump have been discussed.

## BIBLIOGRAPHY

1. Anderson, L. L., Butcher, R. L., Melampy, R. M. Subtotal hysterectomy and ovarian function in gilts. *Endocrinology* 69:571-80, 1961.
2. Barnes, P. H., Penner, D. W., Hogg, G. R. Hysterectomies at the Winnipeg General Hospital (from June 1, 1956 to May 31, 1957). *Canad. Med. Ass. J.* 82:912-7, 1960.
3. Bowman, E. A., Barclay, D. L., White, L. C. Cesarean hysterectomy: an analysis of one thousand consecutive operations. *Bull. Tulane Med. Fac.* 23:71-83, 1964.
4. Stanley-Brown, M., Shields, F. E. Supracervical pregnancy following supravaginal hysterectomy. *Amer. J. Obstet. Gynec.* 48:714-6, 1944.
5. Burnett, J. E., Jr. Hysterectomy: results of a ten-year study. *Obstet. Gynec.* 20:522-7, 1962.
6. Castallo, M. A., Wainer, A. S. Length of the vagina following abdominal hysterectomy, total and subtotal. *Amer. J. Obstet. Gynec.* 60:406-10, 1950.
7. Connors, D. A., Cresci, J. V., Glass, M. Vaginal delivery of a six months' living child four years after supravaginal hysterectomy. *Amer. J. Obstet. Gynec.* 45:309-14, 1943.
8. Cosbie, W. G. Carcinoma of the cervix after supravaginal hysterectomy. *Amer. J. Obstet. Gynec.* 51:751-7, 1946.
9. Counsellor, V. S. Panhysterectomy and subtotal hysterectomy: indications and technic. *Surg. Clin. N. Amer.* 27:790-5, 1947.
10. Davis, J. E., Cheek, D. B. Bleeding from the cervix after subtotal hysterectomy. *J.A.M.A.* 131:816, 1946.
11. Doege, P. S. Total versus subtotal abdominal hysterectomy. *J. Int. Coll. Surg.* 16:486-91, 1951.
12. Frank, R. T. Heminecrosis of cervical stump following supravaginal hysterectomy. *Amer. J. Obstet. Gynec.* 50:226-7, 1945.
13. Frank, R. T. Mucocele of the cervical stump together with a discussion of the merits of total vs. supravaginal hysterectomy. *Amer. J. Obstet. Gynec.* 57:341-4, 1949.
14. Fredrikson, H. Ovarian function after subtotal hysterectomy. *Acta Obstet. Gynec. Scand.* 31:376-86, 1952.
15. Greenberg, M. W., Beilly, J. S., Dissick, J., Tetenbaum, H. Survey of hysterectomies: a twenty-four year review. *New York J. Med.* 61:1163-7, 1961.
16. Henderson, E. L., Fuller, J. L. Total versus subtotal hysterectomy. *South. Surgeon* 16:156-63, 1950.
17. Hitchins, C. S., Paloucek, F. P. Hysterectomy: a comparison of the methods based on 2,008 consecutive cases. *Amer. J. Obstet. Gynec.* 70:1100-14, 1955.
18. Hittner, V. J. Cervical stump in subtotal hysterectomy. *Amer. J. Surg.* 77:766-7, 1949.
19. Hunt, C. J. Indications and advantages of complete abdominal hysterectomy versus incomplete hysterectomy. *Amer. J. Surg.* 71:723-7, 1946.
20. Irons, H. S., Jr. Complete versus supravaginal hysterectomy. *New York J. Med.* 49:1951-5, 1949.
21. Johnson, C. G., Pailet, M. Hysterectomy at Tulane. *Southern Med. J.* 55:657-62, 1962.
22. Masson, J. C. Total versus supravaginal hysterectomy. *Amer. J. Surg.* 48:255-265, 1940.
23. McDermott, J. C. Reflections on hysterectomy. *Calif. Med.* 96:96-7, Feb. 1962.
24. McKinnon, D. A., Jr., Counsellor, V. S. Total versus subtotal hysterectomy for benign conditions. *Surg. Gynec. Obstet.* 74:957-60, 1942.
25. Miller, H. E., Prejean, O. A comparative analysis of total abdominal, supravaginal, and vaginal hysterectomies. *Amer. J. Obstet. Gynec.* 42:580-6, 1941.
26. Mohler, R. W., Bishop, E. H. Supravaginal and complete hysterectomies; an analysis of indications, results and dangers. *J. Int. Coll. Surg.* 8:431-6, 1945.
27. Nettles, J. B., Brown, W. E. The management of the cervical stump. *J. Arkansas Med. Soc.* 58:331-3, 1962.
28. Nielsen, K. Carcinoma of the cervix following supracervical hysterectomy. *Acta Radiological (Stockholm)* 37:335-40, 1952.
29. Pearse, R. L. Supravaginal and total hysterectomy. *Amer. J. Obstet. Gynec.* 42:22-33, 1911.
30. Phaneuf, L. E. The bleeding cervical stump. *Amer. J. Surg.* 85:711-2, 1953.
31. Riva, H. L. Hysterectomy. Indications and technics. *Postgrad. Med.* 39:645-9, 1966.
32. Stanton, E. MacD. Supracervical hysterectomy for fibroids: a study of late end results. *New York J. Med.* 50:2826-8, 1950.
33. Vara, P., Kinnunen, O. Total versus subtotal abdominal hysterectomy. *Acta Obstet. Gynec. Scand.* 31: Suppl. 5:1-43, 1951.
34. Ward, G. G. Cancer of cervix following supravaginal hysterectomy. *Amer. J. Obstet. Gynec.* 41:660-3, 1941.



### Fibromuscular Hyperplasia of the Internal Carotid Artery

W. K. Ehrenfeld (Univ of California, San Francisco), R. J. Stoney, and E. J. Wylie *Arch Surg* 95:284-287 (Aug) 1967

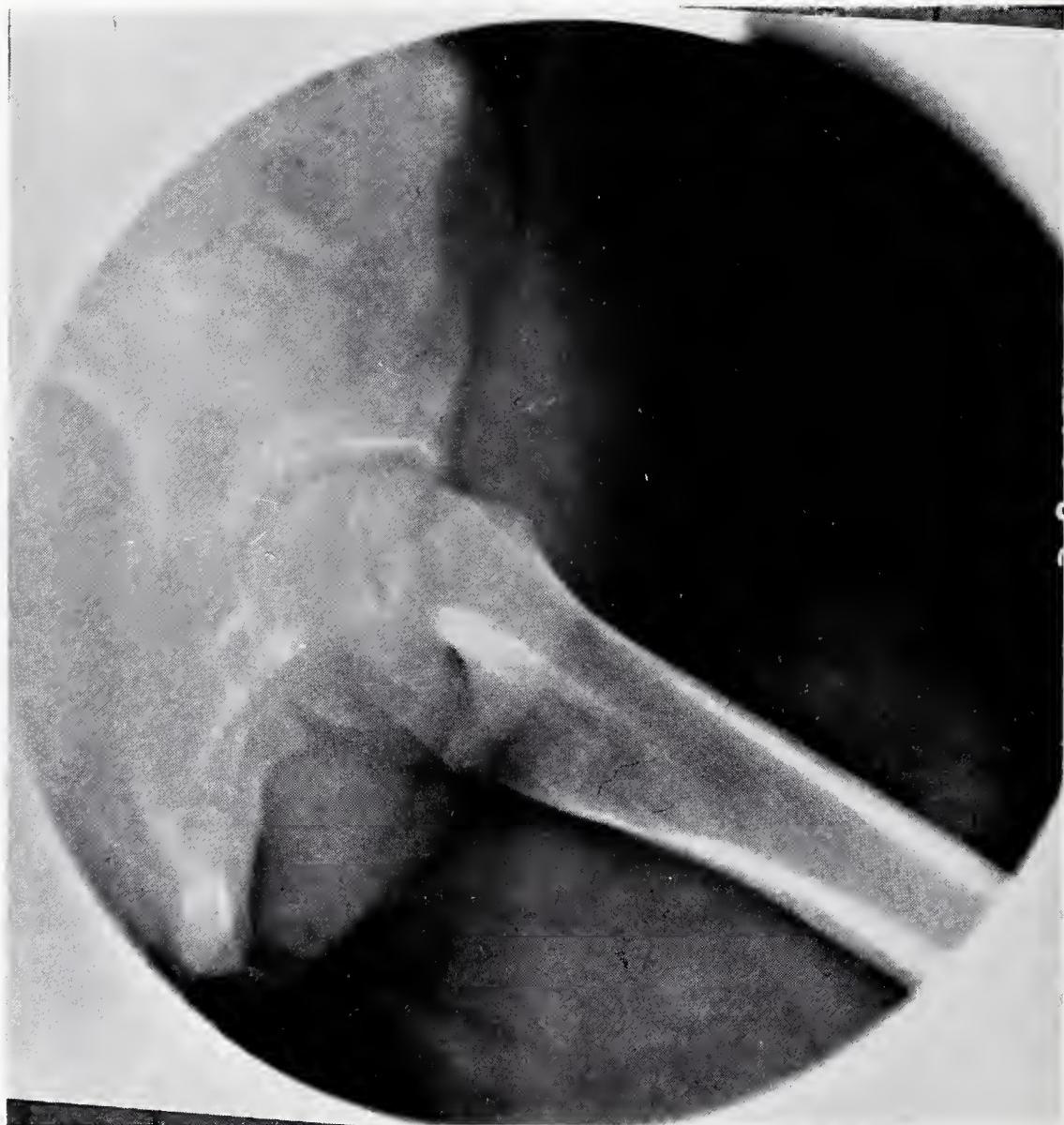
Fibromuscular hyperplasia of the carotid arteries in association with symptoms of cerebrovascular insufficiency has been previously reported. This is the first case in which a revascularization operation has relieved transient neuro-

logical manifestations of carotid stenosis caused by pathologically confirmed fibromuscular hyperplasia. Arterial lengthening resulting in variable degrees of tortuosity is frequently observed in renal arteries affected by this form of arterial dysplasia. In the present case the combination of arterial coiling and irregular constriction involving the portion of internal carotid artery distal to the usual site of arteriosclerosis is diagnostically significant.

## WHAT IS YOUR DIAGNOSIS?

*Prepared by the*  
Department of Radiology, University of Arkansas  
School of Medicine, Little Rock

ANSWER ON PAGE 264



HISTORY: 14-year-old girl with a left sided limp for 6 months.

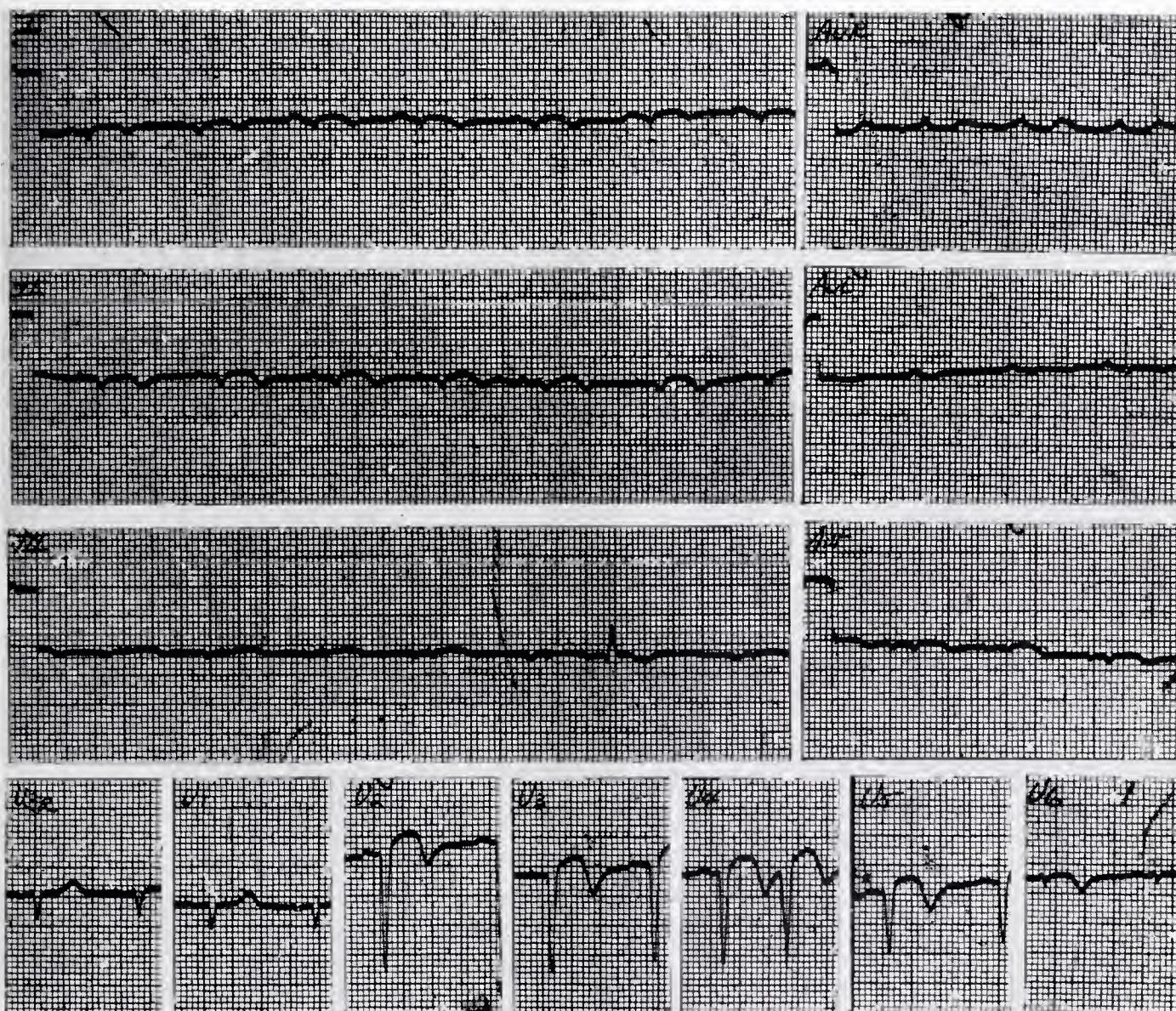


## **ELECTROCARDIOGRAM**

## OF THE MONTH

AGE: 63 SEX: M BUILD: Slender BLOOD PRESSURE: 120/80  
CARDIAC DIAGNOSIS: Possible arteriosclerotic heart disease  
OTHER DIAGNOSIS: Peptic ulcer  
MEDICATION: Digitalis for past 20 days; amount and type not known.  
HISTORY: Sudden onset of chest pain 3 weeks previously. Occasional minor symptoms of pain since then.

**ANSWER ON PAGE 264**



The Department of Medicine, University of Arkansas Medical Center  
James S. Taylor, M.D., Professor of Medicine



## ACUTE AMEBIC DISEASE\*\*

Kerrison Juniper, Jr., M.D.\*

During the past eleven years I have had the opportunity of verifying the presence of acute amebic disease in 120 patients at the University of Arkansas Medical Center, the Veteran's Administration Hospital, and Arkansas State Hospital.<sup>1,2</sup> These cases include 105 patients with colitis, 12 with abscess of the liver, and 3 with cutaneous lesions. Only one-fourth of these cases were seen at the Arkansas State Hospital. There have been 19 fatalities in this series, 16 occurring in mental patients. In all instances, the identification of *Entamoeba histolytica* has been verified by the National Communicable Disease Center in Atlanta.

The distribution of these acute cases is shown in Fig. 1 by county of residence. The unusual incidence for Saline County is due to the large number of cases at the Benton Unit of the Arkansas State Hospital. Although there seems to be a predominance of acute cases along the low-land river counties, a definite conclusion cannot be drawn because of the small number of cases.

This experience with acute amebic disease is unusual for the United States, and would lead one to suspect that Arkansas has an unusually high incidence of this infection. However, an *E. histolytica* infection rate of only 3.4 percent was found in selected areas in and near Little Rock in a sample survey performed by the U.S. Public Health Service in 1962, and reported by M. M. Brooke and associates in the World Health Organization Bulletin in 1963.<sup>3</sup> This unusual incidence of acute amebic disease in Arkansas, therefore, remains unexplained. One possibility is the existence of an unusually pathogenic strain of *E. histolytica* in Arkansas, but there is no definite evidence of this. Another possible explanation might be that active disease is being demonstrated more often than

usual because of particular care in the use of available diagnostic techniques.<sup>4</sup> At any rate, it is evident that amebiasis is a significant public health problem in Arkansas.

I frequently see misdiagnoses concerning amebiasis, both over-and under-diagnosis. Patients referred for supposed chronic amebiasis rarely prove to have this disease. On the other hand, patients referred because of unexplained diarrhea, or for idiopathic ulcerative colitis, often prove to have amebiasis. Two chief reasons for this misdiagnosis have been found.

First, many physicians are not aware that most antidiarrheal preparations, barium sulfate, sulfonamides, antibiotics, antacids, and other medications containing heavy metals render feces unsatisfactory for examination for parasites, especially amebae. Generally patients have received one or more of these substances before stool specimens are obtained for parasitologic examination. These substances may prevent detection of parasitic infections for a period of seven to fourteen days after the last dose of the substance.<sup>4</sup> For this reason, it is imperative that stool examinations be performed before the patient receives any interfering substance. Until stool specimens have been collected, diarrhea may be controlled with diphenoxylate hydrochloride (Lomotil), paregoric, or deodorized tincture of opium.

A second common cause for misdiagnosis is inability of the laboratory to identify protozoan infections correctly. Most clinical laboratories do a reasonably good job of diagnosing helminth infections. Protozoa, however, are much more difficult to identify, and considerable experience under skilled supervision is required for competency in this area. For this reason, it is extremely important that clinical laboratories utilize preserved fecal specimens for parasitic diagnoses.

The U.S. Public Health Service recommends

\*Professor of Medicine, 4301 West Markham, Little Rock, Arkansas.

\*\*From the Department of Medicine, University of Arkansas Medical Center, Little Rock, Arkansas.

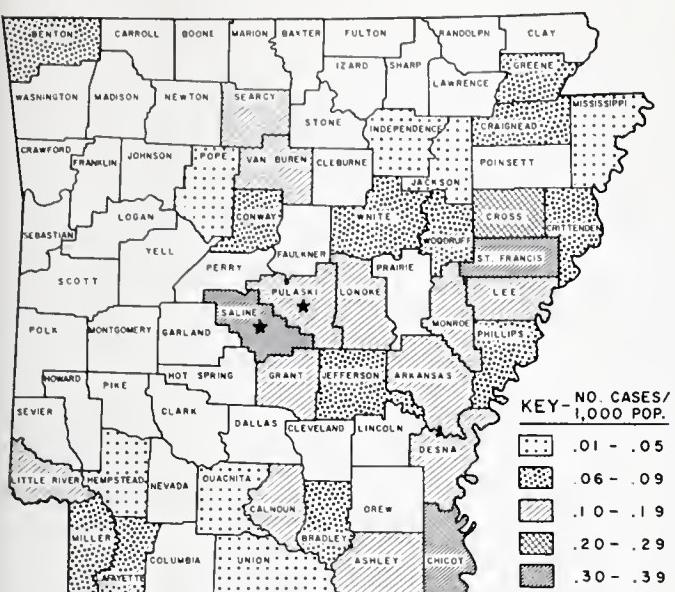


Figure 1.

Distribution of acute amebic colitis by county of residence. The legend indicates the number of acute cases per 1,000 population of the county, according to the 1960 census. The two stars indicate counties in which units of Arkansas State Hospital are located.

that stool specimens be preserved by two techniques: 1) PVA-fixative, and 2) 10 percent formalin fixative. From PVA-fixed stool, a stained film is prepared which is particularly useful for identification of trophozoite stages.<sup>5,6</sup> The formalin-fixed specimen is concentrated by the formalin-ether technique, a method particularly valuable for detection of helminth infections.<sup>7</sup>

Fresh stool specimens are no longer necessary

for routine parasitic examination. The preservative methods have a distinct advantage in that the specimens can be kept for prolonged periods of time and can be sent to other laboratories for confirmation of the diagnosis. These fixation techniques also make it possible for stool specimens to be collected and preserved either by the patient at home or on the hospital wards, and at any time of the day or night. In my opinion, any laboratory not offering these methods is not supplying ideal parasitic diagnosis.

#### REFERENCES

1. Juniper, K., Jr., 1962. Acute amebic colitis. Amer. J. Med. 33:377.
2. Juniper, K., Jr., V. W. Steele, and C. L. Chester. 1958. Rectal biopsy in the diagnosis of amebic colitis. South. Med. J. 51:515.
3. Brooke, M. M., and G. R. Healy, P. Levy, R. L. Kaiser, and W. L. Bunch. 1963. A sample survey of selected areas in and near Little Rock, Arkansas, to assess the prevalence of *Entamoeba histolytica*. World Health Bull. 29:813.
4. Juniper, K., Jr. 1967. Parasitic Diseases of the Intestinal Tract, Ch. 24 in Paulson, M. (Ed.), *Gastroenterologic Medicine*, Lea and Febiger, Philadelphia, pp. 475-480 and 515-548.
5. Brooke, M. M. and M. Goldman. 1949. Polyvinyl alcohol-fixation as a preservative and adhesive for protozoa in dysenteric stools and other liquid materials. J. Lab. Clin. Med. 34:1544.
6. Wheatley, W. B. 1951. A rapid staining procedure for intestinal amoebae and flagellates. Amer. J. Clin. Path. 21: 990-991.
7. Ritchie, L. S. 1948. An ether sedimentation technique for routine stool examinations. Bull. U.S. Army Med. Dept. 8:326.



#### Presymptomatic Wilson's Disease

A. J. Levi et al (S. Sherlock, Royal Free Hosp, Gray's Inn Rd, London) *Lancet* 2:575-579 (Sept 16) 1967

The severe consequences of presymptomatic Wilson's disease may be prevented by adequate chelation therapy. Seventeen children from five families having members with Wilson's disease were studied to detect presymptomatic subjects; seven had clinical Wilson's disease, five were diagnosed as presymptomatic (homozygotes), and five were believed normal or heterozygotes. Kayser-Fleischer rings were present in symptomatic but

absent in presymptomatic patients. All presymptomatic homozygotes had low serum copper and ceruloplasmin levels, but these estimations could not distinguish them with certainty from heterozygotes. A liver-copper concentration over 25 mg/100 gm dry weight, confirmed the presymptomatic state. The liver histology may be normal or abnormal, depending on the stage of the disease. Two heterozygotes showed virtually normal liver histology and copper concentration. Wilson's disease needs to be positively excluded in all siblings of a proved case, all children who have had a sibling with cirrhosis and all young people with chronic liver disease.



## EDITORIAL

# A Classic Article on Carcinoma of the Breast

Alfred Kahn, Jr., M.D.

Carcinoma of the breast is a leading cause of cancer death among women. This disease has been reviewed by Moore, Woodrow, Aliapoulios, and Wilson in an article certain to be considered a medical classic in the New England Journal of Medicine (Vol. 277, page 293, August 10, 1967, and in the following three issues of this journal). Moore's article supplies the following information.

Moore's report in addition to reviewing the literature, consists of information from 248 patients treated in the Peter Bent Brigham Hospital as primary cases; there was also a group of 221 cases referred for treatment. These patients were subjected to various modes of therapy under close observation.

The authors' philosophy is that early detection leads to more cures. They definitely feel that cure is related to tumor size, location, histologic type, and lymph node involvement. They discredit "biologic predestination". For these reasons, frequent examinations are indicated, and this is especially true where a close relative has breast cancer; for example, daughters of patients with breast cancer have a 7% chance of breast cancer.

It is of interest that the Brigham series shows that nursing a baby for three months decreases the incidence of breast cancer statistically. Also of statistical interest is that bearing children affords some protection against breast cancer. The menopause affords no real protection against breast cancer, but it does seem to be a period in which corrected statistics show a temporary leveling off in the rising incidence rate. Previous oophorectomy decreases breast cancer incidence. Delay factors in diagnoses had an adverse effect on survival statistically. Previous breast disease is important in breast cancer in that the diagnosis is hard to make. Breast biopsy is advised for all

breast lumps with few exceptions (page 296).

These investigators use Haagensen's clinical classification as a basis for treatment: Classes A, B, C, and D, varying from minimal to advanced. They recommend mastectomy with lymph node dissection in Class A, as it provides 80% or more cure rate, if the nodes are negative, and if they are positive, they provide clues as to prognosis and treatment. Based on their schema, Class A and B patients get a mastectomy with axillary dissection. Classes C and D are considered advanced and get special treatment. The following points were made in their discussion of localized breast cancer. These workers emphasize the relationship between general survival and histologic grading. They condemn simple mastectomy and do not favor super radical surgery. They recommend in addition to adequate surgery, super-voltage irradiation if there is lymph node involvement or a suspicion of such. Oophorectomy or radiation castration, they report, has equivocal benefit despite citing papers by its proponents. Chemotherapy of cancer of the breast is still unproved.

The primary treatment of locally advanced cancer is radiotherapy alone. An analysis of Brigham Hospital primary cases support the ideas presented above.

The follow-up data on treated patients indicates half the patients survive with recurrence. Involvement of the opposite breast is said to occur in 7% to 12% of the cases; mammography and careful physical examination of the remaining breast are recommended by some at six months intervals. The recurrences of cancer when present should be treated with simplest possible procedures, and x-ray is recommended highly. Oophorectomy helps, too, if the patient is within ten years of the menopause; even in older patients, it is of benefit and is recommended in recurrent or metastatic

disease in patients under 75 years. Predictors of favorable response to adrenalectomy and hypophysectomy include generally a more favorable outlook if the recurrence-free period after therapy is long; there are no good predictors based on estrogen; even palliation from oophorectomy is not a good clue as to whether or not adrenalectomy or hypophysectomy will work.

The authors studied cases and series of palliation therapy using surgical and radioactive yttrium hypophysectomy. The conclusion was drawn that hypophysectomy did give palliation but that the palliation was no better than adrenalectomy. Moreover, hypophysectomy is difficult to perform, the post-operative course is difficult and lastly, replacement therapy is harder to achieve. The authors prefer adrenalectomy with pretreatment to try and induce adrenal atrophy; they also recommend 5-fluoro-uracil in the adrenalectom-

ized cases.

The use of estrogens and androgens is of value in selected cases, but the side effects as hypercalcemia, etc., are unpleasant complications. Estrogens seem to be beneficial in elderly patients as a palliative. Androgens are also used, but the side effects are severe enough to contra indicate them frequently. Progestins are of no value. Corticosteroids will produce good remissions in some patients; they are best used if surgical adrenalectomy cannot be performed. The side effects of their use is well known. The authors commented that chemotherapy with 5-fluoro-uracil in combination with adrenalectomy or corticosteroids is of value but by itself as a desperate measure in terminal cases.

Moore's review of therapy of cancer of the breast is a medical classic and should be studied by the profession.



#### **Hurler's Syndrome: Genetic Study of Clones in Cell Culture With Particular Reference to the Lyon Hypothesis**

B. S. Danes and A. G. Bearn (Rockefeller Univ, New York) *J Exp Med* 126:509-521 (Sept 1) 1967

Clones of skin fibroblasts derived from affected individuals and heterozygous carriers in families with the autosomal forms of Hurler's syndrome showed marked metachromasia and increase cellular uronic acid. Since only one cell population was demonstrated in clones derived from heterozygous carriers, no evidence for autosomal inactivation was obtained. Clones derived from affected individuals with the X-linked recessive form of Hurler's syndrome contained uniform populations of metachromatic staining cells which demonstrated increased cellular uronic acid. Clones derived from the noncarrier fathers showed no cellular metachromasia or increased cellular uronic acid. Clones derived from the heterozygous mothers and sisters showed two populations both qualitatively and quantitatively. Of these clones 72% were metachromatic and demonstrated an increased acid content; 28% of the clones showed no metachromasia and the uronic acid content was similar to that found in normal individuals.

#### **An Electro-Clinical Study of Cerebral Gas Embolism in Cardiac Surgery**

G. Arfel et al (H. Arfel et al (Hôpital Broussais, Paris) *Electroenceph Clin Neurophysiol* 23:101-122 (Aug) 1967

Sixty-seven cases of suspected cerebral gas embolism were electro-clinically analyzed during the operative and postoperative periods of open-heart surgery. During the operative period the EEG showed a sudden appearance of depression or slowing that was localized in the right hemisphere alone, or sometimes in both hemispheres while constantly predominating on the right. A phase of transient recovery followed, with the records becoming momentarily symmetrical and often normal. After this a secondary deterioration characterized by reappearance of continuous slow waves, sometimes interrupted by spike-like components on the side of the embolism, occurred. The focal abnormalities often consisted of periodic spike-like components possibly associated with ictal discharges. The focal or diffuse signs improved in several days or weeks. The record might become normal, but depression of EEG activity often persisted in the right posterior region. Convulsions of a myoclonic type, clearly predominant on the left of the body, occurred in 25 cases.



## MEDICINE IN THE

### UTILIZATION OF PART TIME STAFF FACULTY IN 78 MEDICAL SCHOOLS

The continued utilization of part-time faculty by U.S. medical schools is evidenced in the reports submitted by 78 of the 88 existing schools which indicate that in academic year 1966-67 staffing in 1,214 teaching departments was supplemented by the use of 30,828 part-time faculty members. Eighty-five per cent of these part-time faculty served on a nonpaid or voluntary basis primarily in clinical teaching departments. Of the total departments reporting part-time faculty, 177, or 14 per cent used only paid part-time faculty, 386

departments (32 per cent) used only nonpaid part-time faculty, and 651 departments (54 per cent) used both paid and non-paid part-time faculty. Departments using both paid and nonpaid part-time faculty accounted for 87.4 per cent of all of the paid faculty members reported, for an average of 6.3 per department and 79.8 per cent of all nonpaid faculty members reported, for an average of 32.0 per department.

The distribution of part-time faculty members among the 519 reporting clinical departments is presented in Table 1, which indicates the number of teaching departments reporting for each medi-

TABLE I  
**Part-Time Staffing of Clinical Departments in U.S. Medical Schools Academic Year 1966-67**

Department	Part-time Paid			Part-time Nonpaid		
	No. of Depts.	No. of Faculty	Average	No. of Depts.	No. of Faculty	Average
Medicine	57	545	9.6	61	6,482	106.3
Surgery	62	514	8.3	77	4,252	55.2
Anesthesiology	13	33	2.5	27	344	12.7
Dermatology	16	65	4.1	25	380	15.2
Neurology	24	133	5.5	29	249	8.6
Obstetrics-Gynecology	44	211	4.8	65	2,417	37.2
Ophthalmology	24	115	4.8	34	641	18.9
Orthopedic Surgery	11	71	6.5	21	366	17.4
Otolaryngology	17	92	5.4	24	408	17.0
Pediatrics	53	307	5.8	58	2,299	39.6
Phys. Med. & Rehabilitation	14	42	3.0	19	149	7.8
Psychiatry	58	1,066	18.4	57	2,682	47.1
Prev. Med. & Pub. Health	40	354	8.9	47	513	10.9
Radiology	43	159	3.7	59	996	16.9
Pathology	43	147	3.4	69	1,036	15.0
Total	519	3,854	7.4	672	23,214	34.5
	97	275	2.8	158	1,951	12.3
Sections of Clinical Dept.	616	4,129	6.7	830	25,165	30.3

cal specialty area, total number of part-time faculty, and averages per department for both paid and nonpaid faculty. Departmental averages for part-time paid faculty range from 3.0 in departments of physical medicine and rehabilitation to 18.4 in departments of psychiatry with an overall average for all clinical departments of 7.4. The average for nonpaid part-time faculty ranges from 7.8 in departments of physical medicine and rehabilitation to 106.3 in departments of medicine with an overall average for all clinical departments of 34.5.

More than one half of the part-time faculty in clinical departments are affiliated with departments of medicine, psychiatry, and surgery that constitute one quarter of all reporting clinical departments. The departments representing these 3 medical specialties as a group averaged 12 paid part-time faculty and 69 nonpaid part-time faculty as contrasted with a group average for the other three quarters of reporting clinical departments of 5 paid and 21 nonpaid part-time faculty. Eighty-five per cent of the departments of medicine, psychiatry, and surgery used both paid and nonpaid part-time faculty members as contrasted to 61 per cent of the other clinical departments. Apparently the part-time faculty constitutes an even greater asset to the departments of medicine, psychiatry, and surgery than is provided by their vital services to the other clinical or basic science teaching departments. While it is not possible quantitatively to assess the contribution of part-time faculty to the medical education process, it is obvious that part-time services provided by more than 30,000 individuals could be equaled only by a substantial increment in full-time faculty.

#### THE MONTH IN WASHINGTON

Washington, D.C.—The American Medical Association urged that Congress precisely define "public health services" to prevent the so-called "Partnership in Health" legislation being used as authority for unlimited expansion of government medicine.

In a letter to Chairman Lister Hill (D.-Ala.) of the Senate Committee on Labor and Public Welfare, Dr. F. J. L. Blasingame, executive vice president of the AMA, said:

"We are especially concerned with a lack of definition with respect to comprehensive public health services. Neither 'comprehensive' nor 'public health services' is defined in the law or the bill.

While we recognize there is supportable advantage in removing strict categorization of grant funds, we are concerned that the categorical identification having been removed, there will no longer be any limitation on the health care which may be provided. Indeed, from testimony on this legislation by government officials, it would appear that our concern is justified. It is the intent that the Congress is authorizing a program of *individual treatment for unidentified patients for unspecified conditions for unlimited services?* It is clear that the lack of definition of 'public health services' is, in effect, an invitation from Congress to unlimited expansion of 'public health' beyond its traditional role in the community.

"The AMA has supported, and continues to support the furnishing of public health services. We have also supported flexibility of operation within the state and local health departments as an effective tool for community health. We feel, however, that the distinction between the public and private health sectors should be delineated . . . in more positive terms than the mere prohibition against interference with the existing patterns of private professional practice . . . Accordingly, the Association finds itself unable to support this portion of the legislation providing for an undefined program of comprehensive public health services."

The AMA also opposed a provision for federal licensure of clinical laboratories on the ground that licensing of such facilities traditionally has been a state matter.

"We believe that federal licensure of these facilities would establish an undesirable precedent," Dr. Blasingame said.

\* \* \* \* \*

The controversy over generic vs. brand name drugs was aired at hearings of the Senate Finance Committee and the Senate Small Business Monopoly Subcommittee.

Chairman Russell B. Long (D., La.) of the Finance Committee planned to offer an amendment to the Social Security bill, which includes medicare and medicaid changes, to put the emphasis on generic drugs in government medical programs. The monopoly sub-committee, headed by Sen. Gaylord Nelson (D., Wis.), was investigating drug pricing policies with the same objective as Long's proposal.

Long's proposal included the creation of a federal panel to select the highest quality but lowest

cost prescription drugs for which patients would be reimbursed under government medical programs.

Both the Food and Drug Administration and the drug industry opposed establishment of such a committee and national formulary of drugs.

FDA Commissioner James Goddard, M.D., said it would result in "an encroachment on the practice of medicine in such a way that I believe the physicians of this country would rise up in wrath." He also said:

"In essence the bill would impose upon the formulary committee the duty of evaluating every prescription drug used in medical practice today—more than 5,000—and of providing a formulary of the drugs of choice. I would have to exclude drugs deemed unnecessary, therapeutically duplicative, or of unacceptable quality. The enormity of such a task should be borne in mind."

C. Joseph Stetler, president of the Pharmaceutical Manufacturers Association, joined Goddard and John W. Gardner, Secretary of Health, Education and Welfare, in urging that action on the matter be postponed until a report is made on a special study being conducted by HEW. The report is due Dec. 1.

Stetler said the drug industry recognizes the government's responsibility to control federal expenditure in its drug purchase programs. But, he said, Long's proposal would put such a low ceiling on drug prices that it would "jeopardize the ability of quality, research-oriented pharmaceuti-

cal companies to perform effectively."

"The health of all of us and of future generations is dependent on the continued growth and vitality of a progressive and successful pharmaceutical industry," he said.

\* \* \* \*

No other national health problem has been so seriously neglected as alcoholism, according to John W. Gardner, Secretary of Health, Education and Welfare.

"The atmosphere of moral disapproval surrounding the entire subject, and the deplorable custom of treating alcoholics as sinners or criminals have obscured the nature of the problem," Gardner said in connection with a report issued by the National Institute of Mental Health.

The NIMH report, titled "Alcohol and Alcoholism," reviews present knowledge of alcohol, the nature and extent of drinking problems; the identification, treatment and prevention of alcoholism, and the status of current research.

Although alcoholism obviously does not occur without alcohol, the report states that "alcohol can no more be considered the sole cause of alcoholism than marriage can be considered the sole cause of divorce, or the tubercle bacillus the sole cause of tuberculosis."

On the treatment of alcoholism, the report says:

"In the past, alcoholics have been admonished, scolded, denounced, jailed, beaten, ducked, lashed, and threatened with eternal damnation. There is no evidence that any of these measures

#### **ANSWER—What's Your Diagnosis?**

**DIAGNOSIS:** Slipped capital femoral epiphysis.

**X-RAY FINDINGS:** Inferior and medial displacement of the capital femoral epiphysis.

#### **ANSWER—Electrocardiogram of the Month**

**RATE:** 80    **RHYTHM:** Sinus

**PR:** 0.15 sec.    **QRS:** .07 sec.    **QT:** .40 sec.

##### **SIGNIFICANT ABNORMALITIES:**

Low voltage all leads. Significant Q in I, II, V<sub>2</sub>-V<sub>5</sub>, AVF(?) Slight elevation of RS-2 segment in precordial leads. Abnormal T inversion all leads.

##### **INTERPRETATION:** Abnormal.

Myocardial infarction extensive, anterior, probably recent; probable old inferior infarction.

##### **COMMENT:**

Frequently the presence of multiple infarctions will be manifest by low voltage and changes as noted on this tracing.

has had significant therapeutic value for more than an occasional alcoholic. Available evidence seems to demonstrate that long-lasting results can be achieved primarily by a technique known generally as psychotherapy."

\* \* \* \* \*

The federal government is planning on increasing the monthly medicare insurance rate for physicians' services for next year and 1969.

The present rate is \$3 a month. The medicare law designated Oct. 1 as the deadline for setting the rate for 1968 and 1969 but Congress approved legislation postponing the announcement until Dec. 31.

John W. Gardner, Secretary of Health, Education and Welfare disclosed a possible increase from \$3 to \$4 in a letter to Sen. John J. Williams, Del., ranking GOP member of the Senate Finance Committee.

The monthly premium is paid by persons 65 and older who elected to get benefits under Part B of the medicare program providing physician services.

"I would promulgate a rate of \$3.80 for the two-year period of 1968 and 1969, 25 cents of the increase being based upon our evaluation of the

extent to which we believe the premium rate was below the actual cost for 1966-67 and 55 cents being the estimated additional cost to be expected from an estimated increase in utilization and in physicians' fees," Gardner said.

## THINGS TO COME

### ANNOUNCEMENT

There will be a "Post Graduate Symposium in Nuclear Medicine" with the faculty to be comprised of staff of the Mallinckrodt Institute of Radiology, Washington University Medical School, St. Louis, Missouri, and fifteen visiting lecturers. The symposium will be composed of two parts, (1) Introduction to Nuclear Medicine, January 17th, 1968 and (2) Progress in Nuclear Medicine, January 18th and 19th, 1968.



## PERSONAL AND NEWS ITEMS

### Dr. G. E. Malone Announces Association

Dr. G. E. Malone of Atkins announces the association of Dr. William E. Jackson for the general practice of medicine. Dr. Jackson is a 1964 graduate of the University of Arkansas School of Medicine and just completed a tour of duty with the U. S. Army.

### Doctors Attend Academy

Dr. B. J. Puckett of Siloam Springs attended the Annual Scientific Assembly of the American Academy of General Practice in Dallas. Also, attending the Academy in Dallas were Dr. Ben Saltzman and Dr. John F. Guenthner of Mountain Home.

### Dr. Kerr Gives Talk

Dr. Robert Kerr of Mountain Home gave a talk on "Fractures and Splints" at a session of the Crash Nurses course at the Baxter General Hospital.

### Doctors Held Cancer Seminar

A Cancer Seminar was held in Fort Smith with Dr. Samuel E. Landrum of Fort Smith as moderator. One of the speakers was Dr. G. Thomas Jansen who is associate clinical professor of the Department of Medicine at the University of Arkansas Medical Center. Dr. Jansen's subject was "Skin Cancer".

**Rison Doctor Opens New Clinic**

Dr. Barbara A. Barksdale of Rison has recently opened a new clinic in Rison. Dr. Barksdale has been a physician in Rison for the past nine years.

**Doctor Returns to Practice After a Year of Study**

Dr. Maxwell G. Cheney has returned to general practice of medicine and surgery at the Cheney-Snow Clinic in Mountain Home after a year of advanced study at the University of Arkansas Medical Center of Heart disease and lung disease. Dr. Cheney is now a board qualified specialist in internal medicine.

**Dr. Etherington Elected to AAGP**

Dr. Robert A. Etherington of Eureka Springs has been elected to active membership in the American Academy of General Practice.

**Dr. Fields Re-elected to AAGP**

Dr. Elizabeth C. Fields of Marianna has been re-elected to active membership in the American Academy of General Practice.

**Future Physicians Club Seeks Members**

Dr. L. D. Massey, founder of the Future Physicians Club, and others sponsoring the club are planning a new year of interesting programs and are seeking new members in Osceola.

**Doctors Sponsor Pediatric Meeting in Fayetteville**

Dr. W. G. Lawson and Dr. Wade W. Burnside, Jr. of the Fayetteville Pediatric Clinic sponsored the sixth annual meeting of the Arkansas Section of the American Academy of Pediatrics.

**Dr. E. M. Gray Honored**

Dr. Elisha Monroe Gray of Mountain Home was honored at the first annual Citizens Appreciation Day Banquet sponsored by the Mountain Home Chamber of Commerce. Dr. Gray began the practice of medicine in Independence County nearly 60 years ago. He received an engraved plaque for his devotion of years to community service and Dr. Ben Saltzman presented him with a pin and tie clasp signifying 50 years of service in the medical profession. Dr. Gray is credited with organizing the Baxter County Medical Society.

**Dr. White Opens New Office**

Dr. Robert H. White of Malvern recently opened a new office. While awaiting the completion of the building, he shared Dr. Raymond V. McCray's office.

**Dr. Foster Elected President of Pulaski Cancer Society**

Dr. Julian Foster was recently elected president of the Pulaski Unit of the American Cancer Society. Dr. A. Tharp Gillespie, past president of the cancer society, made award presentations and Dr. Deane G. Baldwin gave a talk.

**Dr. McLendon Honored**

Dr. Mac McLendon of Marianna was presented a plaque and honored with a dinner for his 50 years of medical service to the people of Lee County.

**Dr. Norton Speaks at Dinner**

Dr. Joe Norton was the speaker at a dinner held during the 20th annual convention of the Arkansas State Licensed Practical Nurses Association. His subject was "Current Opportunities for the Health Team."

**Doctors Open New Clinic in Dumas**

Dr. A. W. Lazenby and Dr. O. G. Blackwell have opened a new clinic in Dumas. Their new building has a total of 3400 square feet of floor space and is located at the corner of Elm and Waterman Streets.

**Doctors Speak at Meeting of AMSA**

Dr. John Herron spoke on "The Place of the State Health Department in the Changing World of Medicine." Dr. Joseph Norton was speaker at the luncheon during the fall board meeting of the Woman's Auxiliary to the Arkansas Medical Society. The meeting was held in Little Rock.

**Dr. Jouett Receives Accreditation**

Dr. Ray Jouett, Little Rock neurosurgeon, has received accreditation by the American Board of Neurological Surgery, following board examinations held in Chicago on October 9-13.



## PROCEEDINGS OF SOCIETIES

### Mass Measles Clinic Held

The Sebastian County Medical Society sponsored a mass measles clinic in Fort Smith. There were eleven clinic sites in the county and everyone including doctors and nurses worked on a volunteer basis. The vaccine was administered with the jet injector guns and was made available to children of ages one through eighteen. Donations were accepted to help cover the cost of the vaccine for the school age group.

### Washington County Medical Society Makes Donation

Washington County Medical Society is raising funds in the amount of \$5,000 to match local funds for the establishment of a sheltered workshop for the disabled in Fayetteville. They just recently made their first donation to Abilities Unlimited.

### NEW MEMBERS

DR. DONALD MARTIN BERRY is a new member of Craighead-Poinsett County Medical Society. He received his preliminary education from Arkansas State College. He graduated from the University of Tennessee in Memphis, Tennessee in 1961 and interned at John Gaston Hospital in Memphis, Tennessee from 1961 to 1962 and served as a resident there from 1962 until 1965 specializing in obstetrics and gynecology. He

served in the Air Force for two years and is now practicing in Jonesboro, Arkansas with an office at 417 East Matthews. His specialty is obstetrics and gynecology.

DR. BOBBY EARL McKEE is a new member of Craighead-Poinsett County Medical Society. He received his preliminary education from Mississippi State University and graduated from the University of Mississippi in 1959. He served his internship at Tampa General Hospital, Tampa, Florida and was a resident in ophthalmology at the Victor C. Smith Eye Clinic in New Orleans, Louisiana. He served with the U. S. Navy from January 1961 to July 1963. He now has an office at 505 East Matthews in Jonesboro and is specializing in ophthalmology.

DR. WILLIAM A. GARY is a new member of Craighead-Poinsett County Medical Society. He attended Memphis State University for his preliminary education and graduated from the University of Tennessee in 1965. He then served as an intern at St. Joseph Hospital in Memphis, Tennessee. He served with the U. S. Air Force for four years from 1953 to 1957. He has been in practice for one year in Trumann, Arkansas, and his office is located at 415 West Main in Trumann. He is in general practice and surgery.



### BOOK REVIEWS

*ROENTGENOLOGIC DIAGNOSIS: A Complement in Radiology to the Beeson and McDermott Textbook of Medicine*—J. George Teplick, M.D., Marvin E. Haskin, M.D., F.A.C.P., and Arnd P. Schimert, M.D., W. B. Saunders Company, Philadelphia and London, 1967, 514 pages.

This is an excellent text in two volumes. The authors state that it is a complement in radiology to the Beeson and McDermott textbook of Medicine. The book is excellently illustrated. There is a short text describing the various disorders. There is a list of references after each section. No radiologic technique is in the text. It is strictly oriented for the medical student, house officer, and practicing physician. It is not a suitable text for radiologists or trainees in radiology. Within its scope as defined by the authors, namely, as a teaching manual for non-radiologists it is excellent. It is highly recommended for this purpose.

*THE OFFICE ASSISTANT IN MEDICAL PRACTICE*—Portia M. Frederick and Mary E. Kinn, C.P.S., W. B. Saunders Company, Philadelphia, London, 1967, 461 pages.  
This brief book will be of value in training office assist-

ants. It discusses the career of an office assistant. It tells about planning of work. There is a review of medicine and the law. Fees, credit, billing, and other procedures are reviewed. There are a number of chapters of minor medical techniques. In general, this book is heartily recommended

as being of value in training office assistants.

**INSURANCE FOR THE DOCTOR—Harvey Sarner, LL.B., Herbet C. Lassiter, LL.B., W. B. Saunders Company, Philadelphia, and London, 1967, 193 pages.**



#### **Urine Sugar Determination by the Two-Drop Clinitest Method**

M. M. Belmonte (2300 Tupper St, Montreal) *Diabetes* 16:557-559 (Aug) 1967

Erroneous urine tests for sugar can result from many causes. The Clinitest method carried out in the usual recommended way (five drops of urine) is accurate in the 0 to 2% sugar concentration range. Over 4% there is a reversal of color which can be mistaken for 3/4% or 1% and which is referred to as "pass through." When two drops of urine are used instead of five, the range of Clinitest change is extended from 0 to 5% and the pass through delayed until a concentration of over 10% sugar is reached. In 191 urine specimens of diabetic children, the confusing pass through was found to occur 70 times when the urine was tested by the 5-drop method. It did not occur in testing the same urine using the 2-drop method. Quantitative chemical analysis established the range of these two methods.

---

#### **Further Studies of Abnormal Insulin of Diabetes Mellitus**

D. O'Brien (Univ of Colorado Medical Center, 4200 E Ninth Ave, Denver) *Diabetes* 16:572-575 (Aug) 1967

Insulin isolated from normal and diabetic pancreas was isolated and injected intraperitoneally into rats together with  $^{14}\text{C}$  glucose. Measurement of  $^{14}\text{C}$  incorporation into the rat diaphragm showed a significantly lesser biological activity for diabetic insulin. These results are in accord with earlier work on the resistance of diabetic insulin to insulinase and on the inheritance of diabetes in terms of the abnormal insulin. There is a possibility for a mutation site in the insulin molecule in relation to known molecular variations.

#### **Diminished Insulin Response to Hyperglycemia in Prediabetics and Diabetics**

J. A. Colwell and A. Lein (VA Research Hosp, 333 E Huron, Chicago) *Diabetes* 16:560-565 (Aug) 1967

Plasma insulin response to 200 gm oral glucose loads was determined in prediabetics, latent diabetics, and diabetics. Regression equations relating plasma glucose to plasma insulin concentration over the first 30 minutes of glucose loading were calculated. The prediabetics had a diminished sensitivity of pancreatic beta cells to glucose stimulation. This defect is also seen in non-obese diabetics and obese diabetics with fasting blood glucose levels above 150 mg/100 ml. These studies support the concept that diabetes is characterized by a diminished sensitivity of pancreatic beta cells to glucose stimulation. Obese diabetics with fasting blood glucose concentrations below 150 mg/100 ml did not display this diminished sensitivity of the beta cells.

---

#### **Virus-Induced Murine Lymphoma Resembling Burkitt's Tumor**

J. J. Butler, A. Szakacs, and J. G. Sinkovics (Univ of Texas, Houston) *Amer J Path* 51:629-638 (Oct) 1967

Stem-cell or undifferentiated lymphoma, histologically similar to that present in Burkitt's lymphoma in human beings, has been observed in Swiss mice subsequent to the injection of a cell passage line started from a single mouse who developed lymphomas following injection of cell-free fluid from a tissue culture of the Rauscher virus. Virus particles were demonstrated in the in-vivo tumor by electron microscopy.

# T U B E R C U L O S I S

# A B S T R A C T S



Sponsored by Arkansas Tuberculosis Association

## MEDICAL COMPLICATIONS OF HEROIN ADDICTION

In a group of ninety-six narcotic addicts observed in a New York city hospital, a number of major medical complications were diagnosed. One fifth of these were related to the respiratory tract and included pneumonias and embolic disease of the lung.

In the United States today from 60,000 to 120,000 persons are addicted to opiates or habituated to them. Approximately 90 per cent take heroin. Other thousands of people use opiates illicitly at times.

This report is concerned with major medical complications of heroin addiction, many of them related to the respiratory tract. It is based on a review of the literature and an analysis of 100 episodes in 96 patients observed at Bellevue Hospital, New York City, between January 1963 and May 1966.

The pulmonary complications were of four types: embolic pneumonia or lung abscess, or both; upper-respiratory-tract acquired bacterial pneumonia; and pulmonary fibrosis or granulomatosis, or both. These comprised 21 per cent of the complications in the Bellevue series.

**Overdose.** An overdose of an opiate is one of the most dreaded complications of narcotic abuse. It may be due to misjudging the amount of drug in an adulterated packet or of taking too large a dose after being off drugs completely for a time.

In two patients in the Bellevue series, overdose was characterized by tachypnea, cyanosis, and a bilateral pulmonary infiltrate.

The mechanism of lung edema secondary to overdose is obscure. It is not clear whether pulmonary edema is a direct consequence of opiate action or the result of an allergic response.

**Pneumonia.** Fourteen patients had bacterial pneumonia. Each had chills, fever, cough, and pleuric chest pain, and evidence of focal disease on physical examination and chest X-ray.

Sputum cultures showed pneumococci in seven cases; *Hemophilus influenzae* in one, *S. aureus* in one, and *Klebsiella pneumoniae* in one. In no case was more than one lobe affected. All the patients responded to appropriate antibiotics.

**Embotic pneumonia.** Five patients had apparent embolic disease of the lungs. In three the source appeared to be the site of heroin injections, the other two patients had tricuspid endocarditis.

**Pulmonary Fibrosis, Arteritis, and Granulomatosis.** Arteritis and thrombosis or granulomatosis, or both, due to such foreign bodies as talc or cotton fibers have been reported but are rare complications of drug abuse. None was seen in the patients in this study. However, the increasingly frequent intravenous administration of a variety of tranquilizers, sedatives, and stimulants together with heroin may result in a sharp increase in the prevalence of these unusual pulmonary complications.

## OTHER COMPLICATIONS

In the non-pulmonary field, complications include endocarditis; hepatitis; tetanus; malaria, transmitted by unsterile needles, which was a complication not found in this series; and such miscellaneous conditions as abscesses at the site of injection, cellulitis, thrombophlebitis, and bacteremia.

The surprisingly high percentage of the patients with bacterial pneumonia is interesting. There was no evidence that the pneumonia could be correlated with periods of unconsciousness or with debility. Whether its occurrence was actually heroin-related or whether the findings in this series are a coincidence is not clear. If the pneumonia were a direct consequence of heroin use, a possible explanation might be the depressive effect of this drug and other opiates on the cough reflex.

## PULMONARY EDEMA

The pulmonary edema and congestion induced by heroin overdose are also interesting. The underlying mechanisms are not understood, but may

DONALD B. LOURIA, M.D.; TERRY HENSLE, B.S., and JOHN ROSE, B.S.  
*Annals of Internal Medicine*, July, 1967.

be profound hypoxia, opiate-induced histamine release, activation directly of the kinin system with resultant changes in vascular permeability, or an acute allergic reaction. The last is unlikely in that pulmonary edema may occur on the victim's first "main-line" heroin experience.

Regardless of the mechanisms, the therapeutic approach seems clear — nalorphine or a similar drug (if the respirations are very slow), supportive therapy, and, if hypoxia and cyanosis are severe or persistent, oxygenation by use of a positive-pressure apparatus. Ordinarily, antibiotics, diuretics, rotating tourniquets, and cardiotonics such as digitalis are not needed.

Perhaps it is inevitable that discussion of the medical complications will result in further demands for maintenance narcotic treatment as public health policy.

While some complications could be reduced if addicts were given their drugs under controlled circumstances by physicians, it is also likely that the increasing venality of traffickers in narcotics will result in greater unpredictability as to exact dose and thus present the addict with the risk of inadvertent overdose. The concept that maintenance drug therapy is the panacea is spurious.

#### **DRUG WITHDRAWAL**

From the medical point of view, the treatment of drug overdose is withdrawal of the drug. Since the greed of traffickers and pushers has resulted in the sale of progressively less potent packets of heroin, withdrawal is now relatively easily accomplished. Therefore, the solution of the problem of the addict does not depend upon physiologic needs but on the efficacy of rehabilitation.

Current experiments on maintenance require evaluation over a prolonged period of time before a valid judgment can be made. It may be that narcotic antagonists such as cyclazocine offer opportunity for rehabilitation without maintaining the patient on addicting drugs. Likewise, any one of several rehabilitative experiments that do not use drugs may be found to be effective.

In any case, at our present state of knowledge, reports such as this on the medical complications of addiction can best be used not to advocate one or another of the many rehabilitative efforts, but rather to alert physicians and others to these complications and to subserve educational purposes in an attempt to convince young persons in endemic areas that illicit narcotic users incur immense risks of untoward reactions and infection that may result in irreparable physical damage or death.



#### **Unilateral Pulmonary Agenesis**

J. B. Booth and C. L. Berry (Hosp for Sick Children, Great Ormond St, London) *Arch Dis Child* 42:361-374 (Aug) 1967

Seventeen cases of unilateral pulmonary agenesis are described and illustrated. The abnormalities that they show have been compared with those recorded for other patients in the literature to demonstrate both the characteristic features of the condition and the associated generalized developmental defects. An increased percentage of ipsilateral anomalies is recorded. Lung function tests have been carried out on seven of the eight living patients and confirm that in agenesis of the lung the growth of the existing lung provides adequate pulmonary function, but that a reduction in vital capacity and exercise tolerance can be demonstrated.

#### **Effects of Magnesium Pemoline and Dextroamphetamine on Human Learning**

J. T. Burns et al (Mental Health Research Institute, Univ. of Michigan, Ann Arbor) *Science* 155:849-851 (Feb 17) 1967

Two central nervous system stimulants, magnesium pemoline and dextroamphetamine, were tested to see if they facilitate learning in human subjects. Subjects under placebo learned faster than the subjects under any of the several doses of magnesium pemoline; however, none of these differences reached statistical significance. Subjects who received dextroamphetamine learned significantly more slowly than those who received placebo; nevertheless, the dextroamphetamine group in the simpler reaction-time task had significantly faster reaction times than the placebo group, and yet without any decrease in accuracy.

# THE JOURNAL OF THE Arkansas MEDICAL SOCIETY

January, 1968

Vol. 64 No. 8

FORT SMITH, ARKANSAS

**92nd ANNUAL SESSION  
Arkansas Medical Society  
ARLINGTON HOTEL, HOT SPRINGS, APRIL 21-24, 1968**



Among the adjuncts to the physician's skill

## Darvon® Compound-65

Each Pulvule® contains 65 mg. propoxyphene hydrochloride, 227 mg. aspirin, 162 mg. phenacetin, and 32.4 mg. caffeine.



Additional information available to the medical profession upon request.  
ELI LILLY AND COMPANY, INDIANAPOLIS, INDIANA 46206  
701133

U.C. MEDICAL CENTER LIBRARY

JAN 30 1968

San Francisco 94122

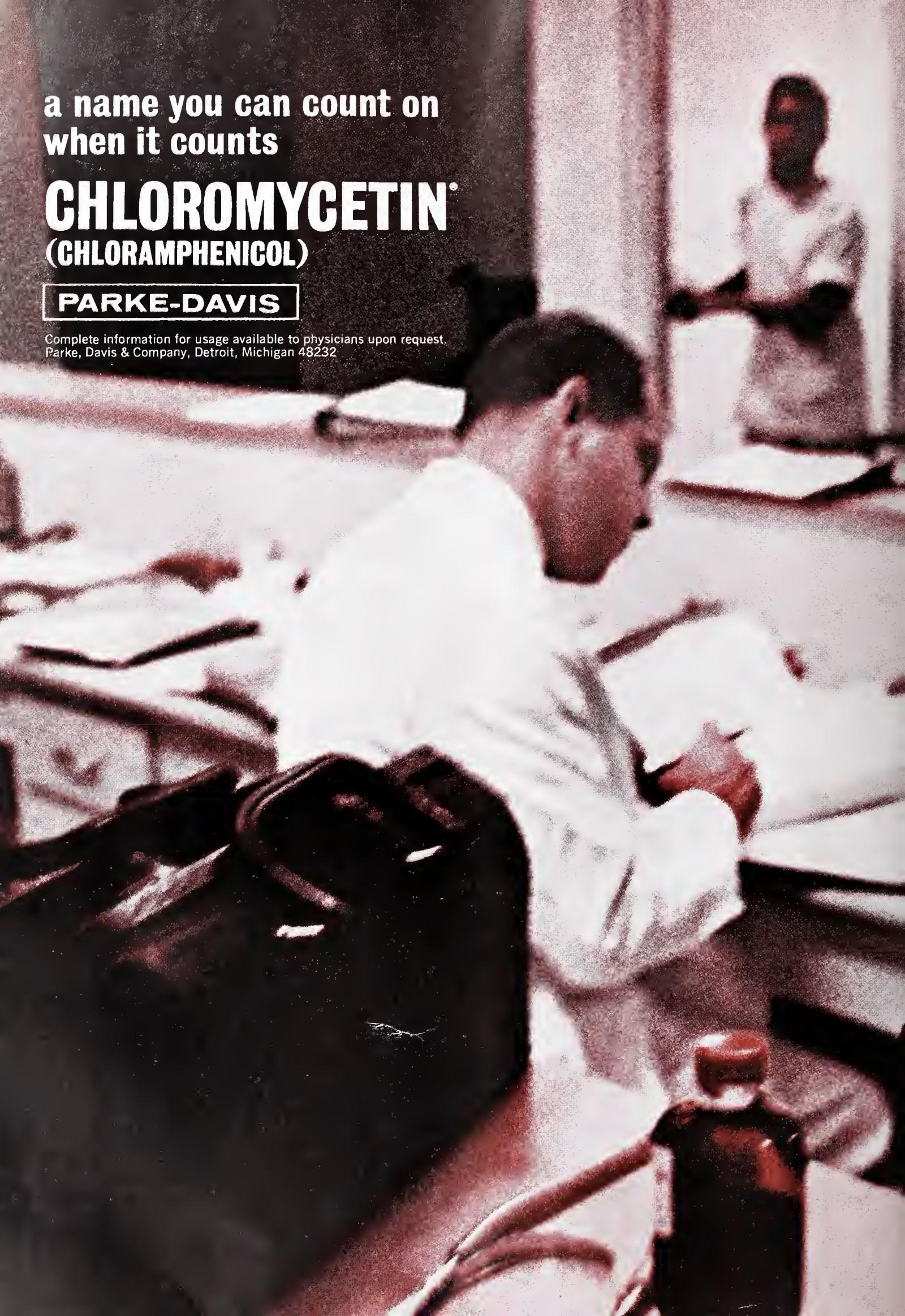
a name you can count on  
when it counts

# CHLOROMYCETIN<sup>®</sup>

(CHLORAMPHENICOL)

**PARKE-DAVIS**

Complete information for usage available to physicians upon request.  
Parke, Davis & Company, Detroit, Michigan 48232





■ to help restore and stabilize  
the intestinal flora

■ for fever blisters and canker  
sores of herpetic origin

LACTINEX contains both *Lactobacillus acidophilus* and *L. bulgaricus* in a standardized viable culture, with the naturally occurring metabolic products produced by these organisms.

First introduced to help restore the flora of the intestinal tract in infants and adults,<sup>1, 2, 3, 4</sup> LACTINEX has also been shown to be useful in the treatment of fever blisters and canker sores of herpetic origin.<sup>5, 6, 7, 8</sup>

No untoward side effects have been reported to date.

*Literature on indications and dosage available on request.*

*References:*

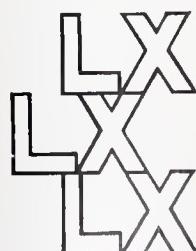
- (1) Siver, R. H.: CMD, 21:109, September 1954. (2) Frykman, H. H.: Minn. Med., 38:19-27, January 1955. (3) McGivney, J.: Tex. State Jour. Med., 51:16-18, January 1955. (4) Quehl, T. M.: Jour. of Florida Acad. Gen. Pract., 15:15-16, October 1965. (5) Weekes, D. J.: N.Y. State Jour. Med., 58:2672-2673, August 1958. (6) Weekes, D. J.: EENT Digest, 25:47-59, December 1963. (7) Abbott, P. L.: Jour. Oral Surg., Anes., & Hosp. Dental Serv., 310-312, July 1961. (8) Rapoport, L. and Levine, W. I.: Oral Surg., Oral Med. & Oral Path., 20:591-593, November 1965.

**HYNSON, WESTCOTT  
& DUNNING, INC.**



BALTIMORE, MARYLAND 21201

(LX04)



**THE  
JOURNAL OF THE  
Arkansas  
MEDICAL SOCIETY**

Owned by

**THE ARKANSAS MEDICAL SOCIETY  
And Published Under Direction of the Council**

**ALFRED KAHN, JR., M.D., Editor**  
**1300 West Sixth Street Little Rock, Arkansas**

**MR. PAUL C. SCHAEFER, Business Manager**  
**218 Kelley Bldg. Fort Smith, Arkansas**

**LITTLE ROCK BUSINESS OFFICE**  
**114 E. Second St. Little Rock, Arkansas**

**OFFICERS OF THE ARKANSAS MEDICAL SOCIETY**  
 JOSEPH A. NORTON, President ..... Little Rock  
 H. W. THOMAS, President-Elect ..... Dermott  
 JEROME LEVY, First Vice President ..... Little Rock  
 DAVID H. PONTIUS, Second Vice President ..... West Memphis  
 GEORGE F. WYNNE, Third Vice President ..... Warren  
 ELVIN SHUFFIELD, Secretary ..... Little Rock  
 W. R. BROOKSHER, Secretary Emeritus ..... Fort Smith  
 BEN N. SALTZMAN, Treasurer ..... Mountain Home  
 JOHN P. PRICE, Speaker, House of Delegates ..... Monticello  
 AMAIL CHUDY, Vice Speaker,  
     House of Delegates ..... North Little Rock  
 ALFRED KAHN, JR., Journal Editor ..... Little Rock  
 JAMES M. KOLB, SR., Delegate to AMA ..... Clarksville  
 JACK KENNEDY, Delegate to AMA ..... Arkadelphia  
 C. C. LONG, Alternate Delegate to AMA ..... Ozark  
 ALFRED KAHN, JR., Alternate Delegate to AMA ..... Little Rock  
 MR. PAUL C. SCHAEFER, Executive Vice President,  
     P.O. Box 1208 ..... Fort Smith

**COUNCILORS**

First District	ELDON FAIRLEY	Osceola
	B. P. RANEY	Jonesboro
Second District	PAUL GRAY	Batesville
	HUGH R. EDWARDS	Searcy
Third District	PAUL MILLAR	Stuttgart
	L. J. P. BELL	Helena
Fourth District	T. E. TOWNSEND	Pine Bluff
	ALBERT W. LAZENBY	Dumas
Fifth District	KENNETH R. DUZAN	El Dorado
	PAUL SZEMORE	Magnolia
Sixth District	KARLTON H. KEMP	Texarkana
	JOHN P. WOOD	Mena
Seventh District	JACK KENNEDY	Arkadelphia
	ROBERT F. McCRARY	Hot Springs
Eighth District	WILLIAM PAYTON KOLB	Little Rock
	JAMES R. MORRISON	Little Rock
Ninth District	STANLEY APPLEGATE	Springdale
	ROSS FOWLER	Harrison
Tenth District	C. C. LONG	Ozark
	A. S. KOENIG	Fort Smith

The Advertising policy of this JOURNAL is governed by the PRINCIPLES OF ADVERTISING of the State Medical Journal Advertising Bureau, Inc., by the Advertising Committee of the Bureau and by the Council of the Arkansas Medical Society.

EXCLUSIVE PUBLICATION—Articles are accepted for publication on the condition that they are contributed solely to this JOURNAL.

COPYRIGHT 1968 — By the JOURNAL of the Arkansas Medical Society.

NEWS—Our readers are requested to send in items of news, also marked copies of newspapers containing matter of interest to the membership.

**SCIENTIFIC ARTICLES**

Common Complications of  
 Pregnancy ..... 271  
     *Sam P. Patterson, M.D.*

Amenorrhea: Diagnosis and  
 Treatment ..... 278  
     *Thomas W. McElin, M.D.*

Bone Marrow Transplant ..... 283  
     *Joseph W. Ferrebee, M.D.*

Enzymes in Diagnosis of Disease ..... 287  
     *Ralph M. Hartwell, M.D.*

Medicine and the Harmonious Man ..... 293  
     *Governor Winthrop Rockefeller*

**FORUM FROM THE DEPT.  
OF OBGYN**

Chronic Tubal Pregnancy ..... 295  
     *M. Ronald Avery, M.D.*

**FEATURES**

What Is Your Diagnosis?	298
Electrocardiogram of the Month	299
Arkansas Public Health at a Glance	300
Editorials	302
Medicine in the News	304
Announcements and Things to Come	307
Obituary	307
Personal and News Items	308
Proceedings of Societies	310
New Members	310
Tuberculosis Abstracts	313

# Common Complications of Pregnancy\*

Sam P. Patterson, M.D.\*\*

Common complications of pregnancy is a rather broad subject that I have narrowed to those topics which might give the most practical information, perhaps with some new information that might be utilized in day to day practice. Various types of abortions, management of breech presentation and resuscitation of the newborn are the three topics to be discussed.

## Abortion

Abortion is interruption of pregnancy, by whatever means and with whatever complication, prior to viability. We might consider first, since it bears import to what will be discussed, the etiology of abortion. Most abortions occur on the basis of fetal causes, maternal causes or cervical incompetence. It should be recalled that probably 20% to 25% of all pregnancies are aborted,<sup>1</sup> and most abortions probably are due to abnormal fetal development. Fifty percent are defective according to Potter,<sup>2</sup> Mall and Meyer,<sup>3</sup> and Hertig and Livingston.<sup>4</sup> More recently chromosomal abnormalities have been reported in 20% to 60% of spontaneous abortions.<sup>5,6</sup> Of maternal causes, we might list decreased progesterone, although I believe that this as a cause has not been well verified in most studies. Acute infections may cause abortions, as may fever. Lastly, and probably of little importance in overall frequency but of much importance in therapeutic success, is cervical incompetence which may be the cause of mid-trimester abortion or immature/premature delivery. *Threatened abortion* is bleeding or cramping in the early part of pregnancy, and it should be remembered that perhaps half of all women have some bleeding in the first trimester of pregnancy. This does not mean that abortion will necessarily occur since less than half of those who bleed will abort. Therefore, one may get a false sense of security with whatever his meth-

od of therapy. One should not overly treat these and receive the false impression that his therapy is preventing abortion. Patients with bleeding in the first trimester of pregnancy should be examined for other causes of bleeding such as cervicitis, polyps and carcinoma. I would like for you to recall that Dr. Edith Potter has stated repeatedly that no therapy is indicated with threatened abortion. If abortion is going to occur, then in all probability the pregnancy is a bad pregnancy and therapy is not warranted. Rest in bed for a couple of days and then pelvic rest, meaning abstinence from coitus, for a couple of weeks is about all that is possibly indicated. If one wishes to give sedatives with threatened abortion, I think this should not be criticized, but the use of other drugs, particularly progestational agents, for threatened abortion might be rather condemned, particularly since they will cause missed abortion and since most of these have been incriminated as teratogenic agents.<sup>7,8</sup> If progestins are used during pregnancy, the only ones that should be used are 17-a-hydroxyprogesterone acetate or caproate,<sup>\*\*\*</sup> because they are pure progestins and have not been reported to cause masculinization of human female fetuses. The injectable form of 17-a-hydroxyprogesterone acetate may cause prolonged amenorrhea after delivery<sup>9</sup> and is no longer used in the treatment of habitual abortion. If one elects to use progestins with threatened abortion, he must recall that missed abortions may occur as a result of treatment with these agents.

*Missed abortion* is death of the fetus with retention in the uterus. The major problem of missed abortion is actually in diagnosis. Cessation of uterine growth with decrease in uterine size may require several months to be apparent. Absence of fetal heart tones after they have been heard will make the diagnosis of missed abortion. Fetal electrocardiography is another method of diagnosis, but this is not available to most of us. Another method which in the future will become practical

\*From the Department of Obstetrics and Gynecology, The University of Tennessee College of Medicine, Memphis, Tenn.

\*\*894 Madison Ave., Memphis, Tenn.

\*\*\*Provera or Delalutin.

is estriol excretion.<sup>10</sup> A practical way to diagnose intrauterine death is with amniography. A radio-opaque material such as sodium diatrizoate\* is injected into the amniotic sac transabdominally. In two hours it should be readily visible on x-ray in the gastrointestinal tract of a living fetus. In addition to being diagnostic it has been our experience in Memphis that if the fetus is dead, the uterus will evacuate itself just as it does when a hypertonic solution is injected to terminate pregnancy and evacuate the uterus. With intrauterine death we formerly let the situation pretty well take care of itself because of mechanical difficulties and possible infection. Intrauterine death is very trying for the patient and family, however. Because of this and because of the possibility of fibrinogenopenia after 16 weeks' gestation,<sup>11</sup> we are now active regarding evacuation of the uterus with missed abortion. Once the diagnosis has been established, the uterus should be evacuated. Since fibrinogenopenia usually does not occur until 16 weeks' gestation and until the fetus has been retained dead in the uterus for five weeks or more, if one has made a tentative diagnosis of intrauterine death, then clotting times or fibrinogen levels should be obtained weekly. When the diagnosis has been made in the first trimester of pregnancy, dilation and curettage will accomplish evacuation of the uterus. In the second or third trimester of pregnancy with a missed abortion or intrauterine death, we are using hypertonic solution.<sup>12,13</sup> With the bladder empty, a No. 18 spinal needle with a stylet is inserted into the uterine cavity. Approximately 200 cc. of amniotic fluid is aspirated, and this is replaced with either 20% saline or 50% glucose. If glucose is to be injected, then a No. 14 or No. 15 spinal needle is necessary because 50% glucose is very thick and difficult to inject through a smaller gauge needle. Hypertonic glucose has been incriminated as causing intravascular gas formation due to infection with clostridium tetani.<sup>14,15,16</sup> For this reason, most are no longer using hypertonic glucose. We have used it in several patients with heart disease and recent congestive failure in whom we did not wish to inject hypertonic saline. Hypertonic saline has been very practical, however, and the uterus will be evacuated usually within 12 to 36 hours. If this does not occur, then an intravenous oxytocin drip is instituted. Transabdominal amniocentesis is a simple technique even if the uterus is not large. Making sure the bladder is empty, one inserts a hand into the vagina and pushes the uterus up

against the anterior abdominal wall.

*Habitual abortion* is three consecutive abortions. It is not an abortion followed by a term delivery, followed by another abortion or so, but is three consecutive abortions. One should be careful in adhering to these criteria for habitual abortion. After one abortion, the next pregnancy will be carried to delivery of a term, living, normal infant in about 87% of cases.<sup>17</sup> With two previous consecutive abortions a subsequent pregnancy will result in a term, living, normal child in 63% of the cases. It is only after three consecutive abortions that the chances of a normal, living child drop appreciably low. After three previous consecutive abortions without therapy, a subsequent pregnancy will result in a normal, living, term child in only about 16% of cases. Because of this, one should not perform surgical procedures or use heroic efforts in pregnancies in women who have had one to two prior abortions.

What should a workup consist of in those patients who have habitual abortion? In the non-pregnant state the patient should be carefully examined to find evidence of diabetes or thyroid dysfunction. It should be emphasized, though, that only rarely will one have abnormal thyroid function without clinical evidence of hyper or hypothyroidism. Hysterosalpingography should be used to determine possible uterine anomalies or tumors. Uterine anomalies, however, do not necessarily cause abortion. We have all delivered patients who have bicornate uteri or who have uterine anomalies of various types. Just because a patient has had one abortion with an anomaly does not mean an operation should be performed to correct the anomaly. In all probability a subsequent pregnancy will be carried to term and result in a normal infant. Pregnanediol excretion studies in some centers are a part of the workup of habitual aborters, but at the present time they are usually performed only in research projects. Vaginal smears might be helpful if one has trained himself in their interpretation.

Those patients who have repeated early abortions in the first trimester should be treated with progestins. 17-hydroxyprogesterone acetate and caproate may be used. The caproate\*\* is used parenterally, and the acetate\*\*\* is used orally. Increasing dosage is used throughout pregnancy once a period has been missed. If pregnancy is antici-

\* Hypaque.

\*\* Delalutin.

\*\*\* Provera.

pated, it may be given after the midcycle basal temperature rise. It is then continued until it is determined whether or not a pregnancy has occurred. Intramuscular 17-a-hydroxyprogesterone acetate should not be used because of prolonged amenorrhea produced.<sup>9</sup>

*Incompetent cervix* is a diagnosis made on the basis of a history of repeated midtrimester abortions or repeated immature or premature deliveries. There is usually a history of painless spontaneous rupture of the bag of waters and of an almost painless short labor. One must again be very careful and not over diagnose incompetent cervix. The diagnosis should require at least two midtrimester abortions with delivery of normal fetuses. I recall a patient who had one previous early abortion. During her second pregnancy she was found on a routine office visit to have a cervix dilated about 4 cm. A circlage procedure was performed in an effort to maintain the pregnancy. She went along another month, at bedrest in the hospital several times, bleeding off and on, and then finally went into labor and delivered immature stillborn, conjoined twins. Would it have not been better had this pregnancy been allowed to terminate earlier rather than to have the worry and expense that this family and physician went through to maintain a bad pregnancy?

The Lash procedure<sup>18</sup> which is performed in the nonpregnant state has been advocated rarely by anyone over the last few years. Closure of the cervix during pregnancy has been a procedure that has been satisfactory in most of our hands using Barter's technique.<sup>19,20</sup> If the cervix maintains its length, these patients are delivered by cesarean section at 38 weeks. If they go into labor prior to this and effacement occurs so that the suture has not held up well, then it is removed and vaginal delivery is allowed. The circlage operation is best done at from about 14 to 18 weeks. With a questionable history compatible with incompetent cervix, then the patient should be examined weekly. If effacement occurs, then the operation is performed immediately. If the history is diagnostic of incompetent cervix, then the cervix should be closed empirically at about 14 to 18 weeks gestation. If the patient is seen for the first time later in pregnancy or if the patient has a questionable history, the cervix may be closed by the McDonald<sup>21,22</sup> or Wurm operation.<sup>23</sup> A Barter procedure can be done at this stage; but, in general, results are better with the McDonald

or Wurm procedures. The sutures are removed about 38 weeks, or sooner if labor occurs, and vaginal delivery is allowed. The overall prognosis for habitual abortion with good medical care and therapy is somewhere around 75-80%.<sup>24</sup>

*Incomplete abortion* is usually best managed with hospitalization and curettage. One may use general anesthesia, which we use in private practice, although on the service at the City of Memphis Hospitals, they are done simply with intravenous meperidine\* and pentobarbital.\*\* We do not employ a perineal shave for these. We give a good perineal shampoo, cleanse the vagina with an antiseptic soap solution and then perform the curettage. The uterus is evacuated with a sponge stick and curetted with a large, sharp curet. The same procedure is followed for all diagnostic and therapeutic D & C's, cervical biopsies and conizations at our institution. Nor do we use uterine packs as they are not hemostatic and cause discomfort when removed. At the time of D & C we administer an intravenous oxytocic and postoperatively give oral oxytocics.

*Therapeutic abortion* in most states may be done legally only to preserve the life of the mother. This is the present state law in Tennessee and Arkansas. Eight states and the District of Columbia have broadened their laws to permit therapeutic abortion when the health of the mother is in danger.<sup>25</sup> Other areas of the world have more liberal therapeutic abortion laws. In the Far East they may be done practically on request. In the western world therapeutic abortions are performed less liberally except in the Scandinavian countries. In the United States there are probably about two therapeutic abortions per 1,000 live births, where in the Scandinavian countries, there are about 30 per 1,000 live births.<sup>26</sup> Indications in the Scandinavian countries are of four types: 1. socioeconomic, 2. preservation of the life or the health of the mother, 3. genetic, such as rubella, and 4. pregnancy following sex crime or incest, which in general includes a girl who is age 16 or less with or without consent. The American Law Institutes have expressed the opinion of the legal profession in this country in a very comprehensive study, the Model Penal Code, and they are recommending provisions similar to those in the Scandinavian countries, but without socioeconomic indications. The legislatures of several states are making efforts to liberalize abortion

\*Demerol.

\*\*Nembutal.

laws at the present time, and I think many of us hope that we will be able to follow the recommendations of the American Law Institutes as expressed in the Model Penal Code. I would hope that this could be set up in most states with abortion committees and not simply with consultation.

Illegal abortion in this country is said to occur at the rate of about 1 million per year,<sup>27-30</sup> and there may be perhaps 5,000 or 10,000 deaths per year as a result of illegal abortions.<sup>31</sup> Therefore, we hope that various states will adopt the program of the Model Penal Code. Rubella causes many malformed infants in this country. It is suggested that legal therapeutic abortion could prevent these heart breaking catastrophes and allow these bad pregnancies to be replaced by good pregnancies. The technique of therapeutic abortion in our community has been in the first trimester, dilation and curettage and in the second trimester intrauterine hypertonic solutions.

#### Breech Presentation

Breech delivery continues to be a very serious complication of pregnancy, and loss or damage of the infant as a result of labor and delivery is one of the most distressing complications of obstetrics. One recognizes the importance of this problem when he recalls the frequency of breech to be somewhere between 3% and 4%, and when he recognizes that vaginal breech delivery is accompanied by mortality that is some 3 to 5 times that of perinatal mortality in general. Hall and Kohl reported a corrected premature fetal mortality of 27% and a mature mortality of 5%<sup>32</sup> in spite of improved nursery care, antibiotics, blood transfusions, and what-have-you. There are certain special problems associated with breech presentation which by and large are not present with vertex presentation. There is compression of the umbilical cord. The distance from the vertex to the umbilicus is some 27 cm. but from the breech to the umbilicus is about 8 or 9 cm. Therefore, compression of the umbilical cord occurs with deep engagement of the breech, whereas it does not occur with cephalic presentation until after the head has been delivered since the umbilicus would not pass the pelvic inlet until this time. Another special problem with breech is the inadequately dilated cervix which occurs not infrequently with prematures and with footling breeches. The third special problem with breeches is trauma to an unmolded fetal head, especially when the delivery is hurried along by the obstetrician. The head

comes last and is not delivered slowly, so gradual molding does not occur as it does with cephalic presentation. The fourth special problem is an increased incidence of prolapsed cord. Lastly is the difficulty in determining the presence of disproportion. All of these exist regardless of the technique of breech delivery and regardless of whether it is spontaneous, assisted or decomposition, and whether or not forceps are used for the aftercoming head. These are all problems that add to the mortality associated with breech presentation.

Since version and extraction have been almost discarded from modern obstetrics and high and midforceps have been practically abandoned, vaginal delivery of the breech is now really the main technique left in the "art of obstetrics." Therefore, many have been opposed to cesarean section for breech presentation and continue to advocate vaginal delivery if at all possible. On the other hand, since Dr. Ralph Wright's advocacy of routine cesarean section for all breeches,<sup>33</sup> a great deal of investigation has been done and reviews of records have been published regarding breech presentation. He cited known cases of brain damage, mental retardation and cerebral palsy, not recognized in the perinatal period, of which the obstetrician is not aware and not reflected in most statistics. Various series of epileptics, spastics and cerebral palsy have reported 7 to 19 percent had been delivered as breeches in contrast to the 3½% incidence of breech delivery.<sup>34, 35, 36</sup> Therefore, if one is delivered as a breech he has a 6 times greater chance of having cerebral palsy, mental retardation, or spasticity than an infant delivered in cephalic presentation. For these reasons Dr. Wright advocates routine cesarean section for all living breeches past 35 weeks gestation. He is the only author, however, who has recommended routine cesarean section; but, all, I think, would agree that cesarean section gives better results than a complicated vaginal breech delivery.

Breech presentation in the primigravida has been the major topic in most articles. In 1962 Varner reported 211 primigravidas delivered vaginally of term breeches with a 2.9% corrected fetal mortality compared with a 0.33% for all term deliveries, or a 9 fold increase if delivered as a breech.<sup>37</sup> In 1964 there were 16,000 breech deliveries reported from 147 hospitals participating in the Foundation for Medical Research.<sup>38</sup> The perinatal death rate for this group of breeches was 151 per 1,000 live births, or 5 times that of all de-

livaries during the same period. For term breeches only, the perinatal mortality rate was 30 per 1,000 live births, or 3 times that of all term infants. Cesarean section was reported as having the lowest perinatal mortality of any type breech delivery. Our own records were reviewed in 1961 regarding the primigravida breech.<sup>39</sup> At that time we reported an increased mortality with breech presentation, particularly when labor was augmented by intravenous oxytocin. Uterine dysfunction with breech presentation will respond to intravenous oxytocin, but with a prohibitively high fetal mortality. Uterine inertia with the breech adds insult to an already disturbed labor, and the wisdom of its use is questioned. Although cesarean sections would save some infants, abdominal delivery creates its own aftermath of problems, that is, bleeding, uterine rupture, prematurity, repeat cesarean sections and intestinal obstruction.

I have reviewed our records for 1959 through 1965, since cesarean section for breech presentation has been liberalized at the City of Memphis Hospitals.<sup>40</sup> Several factors should influence our thinking regarding the judicious increase in cesarean section for breech deliveries: 1. Labor should be smooth and progressive. 2. Age alone should not be a criterion. 3. Excessively large infants should be delivered by section. 4. All primigravidas with breech presentation should have critical clinical pelvimetry as well as x-ray pelvimetry.

When a trial of labor or when vaginal delivery is elected, several points in the management should be emphasized: 1. Thorough familiarity with the normal mechanism of labor for breech presentation with no interference until the umbilicus has reached the perineum. 2. Proper rotation of the infant to allow the shoulders and head to traverse the pelvis in the proper diameters. 3. Careful auscultation of fetal heart tones. 4. Local anesthesia and wide episiotomy. 5. Avoidance of traction or extraction unless absolutely necessary for fetal survival. 6. Adequate clearance of the airway, once exposed. 7. Careful management of the aftercoming head. 8. No oxytocin augmentation with breech presentation.

Breech presentation continues to carry a definite risk for the baby and presents a challenge to all physicians practicing obstetrics. I would advocate liberalization of cesarean section when labor is not smooth and progressive with the breech presentation.

### **Resuscitation of the Newborn**

The last common complication of pregnancy that I would like to discuss concerns asphyxia neonatorum and resuscitation of the newborn.<sup>41,42</sup> Intubation and intermittent positive pressure are accepted as proper resuscitation of depressed newborn infants, but to some this implies costly equipment and rare skill that is difficult to master. I would say that the reverse is true. Very simple equipment is required, and resuscitation can be mastered with ease and with little chance of mechanical failure. Actually, resuscitation of the newborn concerns asphyxia and its causes, prevention and treatment. The etiology of asphyxia neonatorum, or failure to breathe at birth, may be classified as due to placental factors, maternal hypoxia or neonatal anoxia. Under placental factors are included those things that interfere with oxygenation, i.e., toxemia, placenta previa, abruptio placenta, prolonged labor, knots, loops, and that sort of thing. Under maternal hypoxia one would include anesthesia, heart failure, shock, and fever; and under neonatal anoxia would be fetal anomalies, prematurity, central nervous system damage from traumatic deliveries, anesthesia, analgesia, and obstruction of the airway from other causes. The consequences of apnea in the newborn are asphyxia and acidosis. If excessive analgesia or anesthesia have been employed, asphyxia may be augmented; and, if respiratory depression is not effectively combated, the respiratory acidosis becomes a metabolic acidosis resulting in damage to the central nervous system and other vital organs which may be permanent. Prevention should be mentioned in the treatment of neonatal asphyxia. Maternal factors include: proper therapy of diabetes and control of toxemia, with early determination both in diabetes and toxemia; avoidance of premature delivery if possible; proper therapy for Rh incompatibility; and even the prevention of grandmultiparity by tubal ligation or proper birth control and family planning information.

Prevention of asphyxia by proper management of labor and delivery includes: the avoidance of high and mid forceps; oxygenation and immediate delivery for fetal distress; avoidance of excessive analgesia; perhaps no anesthesia with prematurity and certainly no analgesia if at all possible in the last 1½ hours prior to delivery. One could say that no anesthesia is best for the baby, and local and conduction anesthesia are probably

better for babies in general. However, if general anesthesia is used, then the patient should be awake at delivery. One may give general anesthesia for a couple of minutes to cut the episiotomy and apply the forceps, but then allow the patient to wake up prior to delivery. After the episiotomy is cut, ordinarily the patient can deliver the baby herself. Prevention also would include cesarean section for placenta previa and abruptio placenta. For living babies cesarean section for prolapsed umbilical cord is best. Also I would stress the avoidance of premedication with cesarean section. Pre-anesthetic narcotics should not be used with cesarean section, simply atropine or scopolamine with no narcotic prior to delivery of the infant. The abdomen should be prep'd, sterile drapes applied, and the scalpel in the surgeon's hand prior to initiation of general anesthesia. Under these circumstances, ordinarily the infant can be delivered within two minutes after the incision is begun so that by and large no anesthesia has crossed the placental barrier in this 4 or 5 minute period of time after the initiation of anesthesia.

The diagnosis of neonatal anoxia should really be automatic. The engorged cyanotic face of a newborn is normal after the head comes across the perineum, but the pale, pallid face of a depressed infant is not normal. After it is delivered there should be good muscle tone, rather than flaccidity, and the fetal heart rate should be greater than 100. This one may observe by looking at the infant's chest or by feeling with the fingers as he supports the infant on his arm. One can feel the heart rate without counting and quickly know whether it is over 100. Most infants breathe within 30 seconds; and, if they do not, something may be abnormal. We use the Apgar Scoring System,<sup>43</sup> which becomes automatic if one becomes accustomed to it. It should be recorded in the infant's chart. Normally, at 1 minute the Apgar should be 7 or more. This is scored depending on the reflex irritability, respiration, heart rate, color and muscle tone. Those infants with low scores require resuscitation measures.

The treatment of these fragile anoxic infants is oxygenation. The airway must be clear and oxygen delivered to the lungs. In the past, little thought has been given to the cause of the respiratory anoxia. Infants have been poked, massaged, slapped, probed, stuck, sphincters dilated and stimulated physically and chemically, all far out of proportion to the knowledge of the problem.

These procedures can be very dangerous and shocking to a tender infant. The airway should be cleared with a bulb, the feet spanked, and an Apgar taken. If in a couple of minutes the baby is not breathing normally, then resuscitative procedures should be initiated. We do not advocate mechanical resuscitators. All that is necessary is a urethral catheter, about a No. 14 plastic catheter that is not too firm and not too soft. One may either use a laryngoscope or may use the blind technique. I use the blind technique. We teach the blind technique since laryngoscopes at our hospitals are often out of working order—they have been left in solution, the light is out, or it has been misplaced. I use the blind technique and suggest that you master this on stillborn infants. Put your finger in the infant's throat, and it will automatically slip into the esophagus. Then pass the catheter, direct it anteriorly with the finger, and it will slide into the trachea. One may then with his mouth, utilizing a De Lee suction trap, aspirate the trachea, then repass the catheter and begin delivery of oxygen at a rate of about 20 breaths a minute. A good drug for stimulation of respiration is caffeine sodium benzoate. This comes in a 2 cc. ampoule, but one should use only 3 to 5 minims depending on the size of the infant. It is injected into the umbilical vein or into the buttocks. Most other respiratory stimulants have therapeutic doses near toxicity and are not good drugs to use in newborn infants. If there has been a narcotic administered shortly before delivery, particularly if the infant is apt to be premature, we would suggest a narcotic antagonist such as levallorphan tartrate\* or nalorphine hydrochloride.\*\* I use levallorphan tartrate in a dosage of .5 to 1 mgm. to the mother intravenously within 10 minutes prior to delivery. If it is not given to the mother and the infant is depressed, then give 0.05 mgm. in the umbilical vein. One should be extremely careful not to give the maternal dose to the infant.

It should be emphasized that the primary therapy for apnea neonatorum is clearance of the airway and delivery of oxygen. Recently, to combat acidosis alkalis have been recommended for injection in the umbilical vein,<sup>44</sup> but I have not had personal experience with these.

In summary, asphyxia is a very serious obstetric complication which requires prompt diagnosis for institution of lung expansion and proper ventila-

\*Lorfan.  
\*\*Nalline.

tion to salvage more infants with properly functioning central nervous systems.

## REFERENCES

1. Eastman, N. J., and Hellman, L. M.: *Williams Obstetrics*, ed. 13, New York: Appleton-Century-Crofts, 1966, pp. 503-507.
2. Potter, E. L.: Editorial, Notes on Teratology, Vol. 2, No. 3, 1964, Wampole Laboratories.
3. Mall, F. P., and Meyer, A. W.: Studies on Abortuses: A Survey of Pathologic Ova in the Carnegie Embryological Collection, Carnegie Inst. of Wash., Vol. 12, Pub. No. 275, 1921.
4. Hertig, A. T., and Livingston, R. G.: Spontaneous, Threatened and Habitual Abortion: Their Pathogenesis and Treatment, *New England J. Med.*, 230: 797-806, 1944.
5. Carr, D. H.: Chromosome Studies in Spontaneous Abortions, *Obst. & Gynec.* 26:308-326, 1965.
6. Thiede, H. A., and Salm, S. B.: Chromosome Studies of Human Spontaneous Abortions, *Am. J. Obst. & Gynec.* 90:205-215, 1964.
7. Wilkins, Lawson: Masculinization of Female Fetus Due to Use of Orally Given Progestins, *J.A.M.A.* 172:1028-1032, 1960.
8. Fine, Edward, Levin H. M., and McConnell, E. L.: Masculinization of Female Infants Associated with Norethindrone Acetate, *Obst. & Gynec.* 22:210-213, 1963.
9. Whitelaw, M. J., Nola, V. F., and Kalman, C. F.: Irregular Menses, Amenorrhea, and Infertility Following Synthetic Progestational Agents, *J.A.M.A.* 195:780-782, 1966.
10. Georgakopoulos, P. A.: Maternal Estrogen Excretion as Indication of Fetal Death, *Obst. & Gynec. Digest* 8:39-45, 1966.
11. Phillips, L. L., Skrodelis, V., and King, T. A.: Hypofibrinogenemia and Intrauterine Fetal Death, *Amer. J. Obst. & Gynec.* 89:903-914, 1964.
12. Jaffin, H., Kerenyi, T., and Wood, E. C.: Termination of Missed Abortion and the Induction of Labor in Mid-trimester Pregnancy, *Am. J. Obst. & Gynec.* 84:602-608, 1962.
13. Weingold, A. B., Seigal, S., and Stone, M. L.: Intra-Amniotic Hypertonic Solutions for Induction of Labor, *Obst. & Gynec.* 26:622-627, 1965.
14. MacDonald, D., O'Driscoll, M. K., and Geoghegan, F. J.: Intra-Amniotic Dextrose—A Maternal Death, *J. Obst. & Gynec. Brit. Comm.* 72:452-455, 1965.
15. Briggs, D. W.: Induction of Labour with Hypertonic Glucose, *Brit. M. J.* 1:701-702, 1964.
16. O'Driscoll, K., and Geoghegan, F.: Induction of Labour with Hypertonic Glucose, *Brit. M. J.* 1:1113-1114, 1964.
17. Eastman, N. J.: "Habitual Abortion," in Meigs, J. V., and Sturgis, S. H.: *Progress in Gynecology*, New York, Grune and Stratton, 1946, pp. 262-268.
18. Lash, A. F., and Lash, S. R.: Habitual Abortion: the Incompetent Internal Os of the Cervix, *Am. J. Obst. & Gynec.* 59:68-76, 1950.
19. Barter, R. H., et al.: Surgical Closure of the Incompetent Cervix During Pregnancy, *Am. J. Obst. & Gynec.* 75:511-524, 1958.
20. Eastman, N. J., and Hellman, L. M.: *Williams Obstetrics*, ed. 13, New York: Appleton-Century-Crofts, 1966, pp. 526-529.
21. McDonald, I. A.: Incompetent Cervix as a Cause of Recurrent Abortion, *J. Obst. & Gynec. Brit. Comm.* 70:105-109, 1963.
22. Eastman, N. J., and Hellman, L. M.: *Williams Obstetrics*, ed. 13, New York: Appleton-Century-Crofts, 1966 p. 525.
23. Hefner, J. D., Patow, W. E., and Ludwig, J. M.: A New Surgical Procedure for the Correction of the Incompetent Cervix During Pregnancy, *Obst. & Gynec.* 18:616-620, 1961.
24. Javert, Carl T.: Further Follow-up on Habitual Abortion Patients, *Am. J. Obst. & Gynec.* 84:1149-1159, 1962.
25. Kummer, J. M., and Leavy, Z.: Therapeutic Abortion Law Confusion, *J.A.M.A.* 195:96-100, 1966.
26. Guttmacher, A. F., personal communication.
27. Gebhard, P. H., et al.: *Pregnancy, Birth and Abortion*, New York: Harper and Bros., 1958.
28. Taussig, F. J.: *Abortion, Spontaneous and Induced*, St. Louis: C. V. Mosby Co., 1936.
29. Kopp, M. E.: *Birth Control in Practice*, New York: McBride and Co., 1931.
30. Stix, R. K.: *A Study of Pregnancy wastage*, Milbank Mem. Fund Quart. 13: 347-365 (Oct.), 1935.
31. Fisher, R. S., "Criminal Abortion," in Rosen, H.: *Therapeutic Abortion*, New York: Julian Press, 1954.
32. Hall, J. E., and Kohl, S.: Breech Presentation, *Am. J. Obst. & Gynec.* 72:977-990, 1956.
33. Wright, R. C.: Reduction of Perinatal Mortality and Morbidity in Breech Delivery Through Routine Use of Cesarean Section, *Obst. & Gynec.* 14:758-763, 1959.
34. Churchill, J. A.: Relationship of Epilepsy to Breech Delivery, *Encephaloencephalog. and Clin. Neurophysiol.* 11:1-12, 1959.
35. Steer, C. M., and Bonney, W.: Obstetric Factors in Cerebral Palsy, *Am. J. Obst. & Gynec.* 83:526-531, 1962.
36. Fulldner, R. V.: Labor Complications and Cerebral Palsy, *Am. J. Obst. & Gynec.* 74:159-166, 1957.
37. Varner, W. D.: Management of Labor in the Primigravida with Breech Presentation, *Am. J. Obst. & Gynec.* 84:876-883, 1962.
38. Morgan, H. C., and Kane, S. H.: An Analysis of 16,327 Breech Births, *J.A.M.A.* 187:262-264, 1964.
39. Jackson, R. L.: Breech Presentation in the Primigravida, *Am. J. Obst. & Gynec.* 81:653-657, 1961.
40. Patterson, S. P., Mulliniks, R. C., and Schreier, P. C.: Breech Presentation in the Primigravida, *Am. J. Obst. & Gynec.*, to be published.
41. Resuscitation of Newborn Infants, a Report by the Special Committee on Infant Mortality of the Medical Society of the County of New York, *Obst. & Gynec.* 8:336-363, 1956.
42. Abramson, H.: *Resuscitation of the Newborn Infant*, St. Louis: C. V. Mosby and Co., 1960.
43. Apgar, Virginia: The Role of the Anesthesiologist in Reducing Neonatal Mortality, *New York J. Med.* 55: 2365-2368, 1955.
44. Dawes, G. F., and Tooley, W. H.: Alkali Therapy—Pro or Con?, *J. Pediat.* 69:1170, 1966.

# Amenorrhea: Diagnosis and Treatment\*

Thomas W. McElin, M.D., M.S.\*\*

The term "amenorrhea" suggests no specific diagnosis and defines no clinical entity. The absence of monthly periods, in itself, has no direct effect on the patient's well-being, and the only indications for the treatment of amenorrhea are because of its obvious relationship to infertility, for psychological reasons, or because of an endometrial abnormality. Some of the causes of amenorrhea, however, can, if unrecognized, have serious consequences; therefore, it is important, if possible, to properly classify the etiology of this *symptom*—for this it is.

Menstruation is the final and visible result of a chain of events involving several endocrine organs and an end-organ in a definite sequence of stimulation and response. A defective link in this chain will break the sequence. Methods or tests are available to check the adequacy of each link in turn, and the application of such tests leads to a logical and informative system of classification. The clinical use of such a classification facilitates recognition of the need for specific therapy in some instances of amenorrhea and of the value of nothing more than reassurance for others.

It is always logical and helpful, in the discussion of any problem, to inquire where in our total knowledge of that subject does the present block of data belong. Therefore, where in a modern classification of menstrual disturbances does amenorrhea belong? This question, in turn, must be answered by defining the "norms" of normal menstruation, which are as follows: onset—age, 13; frequency, 28 days plus or minus four; three to five days of flow; three to five napkins per diem; zero clots; zero pain; menopause at 50 plus or minus years. In the last decade, the age of the menopause has advanced in this country from 47 to 50 years, presumably because of improved nutrition and general health; not because of the contraceptive "pill".

Having defined the "norms", how, then, can women vary from the normal? The following classification is helpful in defining these variations:

- |                    |                                                                                                                                                                                                                      |
|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Ovulatory</i>   | 1. Hypermenorrhea<br>2. Hypomenorrhea;<br>3. Polymenorrhea;<br>4. Oligomenorrhea;<br>—certainly, all of these terms are better and more easily understood than menorrhagia or metrorrhagia, or menometrorrhagia; and |
| <i>Anovulatory</i> | 5. Aperiodomenorrhea — this indicates bleeding without periodicity—no rhyme or reason.                                                                                                                               |

The first four variants are almost always *ovulatory* defects; these ladies *are* ovulating and a rhythmic "pattern" can usually be detected. Aperiodomenorrhea is almost always associated with *anovulation*. The only other variation from the normal is amenorrhea, which we will now review.

There are two varieties of amenorrhea which will not be considered. The first of these is what has been called "false" amenorrhea—a congenital or acquired stenosis of the hymen or the vagina or the cervix which may prevent the drainage of menstrual discharge. Usually, then, a painful, cystic mass develops in the pelvis, indicating the presence of a hematocolpos or hematometra or hematosalpinx. Institution of proper drainage under general anesthesia provides a satisfactory remedy.

Also eliminated from this review is a consideration of the physiologic amenorrheas, which include prepuberal amenorrhea, gestational (or pregnancy) amenorrhea, postpartum amenorrhea, lactational amenorrhea, and postmenopausal amenorrhea.

Amenorrhea is usually divided into two types:  
(a) *Primary*—indicating that menstruation has never occurred—which is usually associated with hypogonadism—underdevelopment of breasts, sparse pubic and axillary hair, and retarded maturation of the genitalia; and

(b) *Secondary*—signifying that menstrual bleeding has ceased for a period of time in an individual who had menstruated previously. This condition is diagnosed when three complete cycles have been missed.

In a consideration of primary amenorrhea, while the average age of onset in white women on the North American continent is 13, limits of ages

\*From the Department of Obstetrics and Gynecology, Northwestern University Medical School, Chicago, Illinois; and the Department of Obstetrics and Gynecology, Evanston Hospital, Evanston, Illinois. Presented before the Arkansas Medical Society, Hot Springs, Arkansas, May 1, 1967.

\*\*Professor of Obstetrics and Gynecology, Northwestern University Medical School; Chairman, Department of Obstetrics and Gynecology, Evanston Hospital, Evanston, Illinois.

11 to 16 are not abnormal. Certainly, if menstruation has not occurred by age 16, the condition may be labeled "primary amenorrhea." Prior to that age, if menses have not occurred, the term "delayed menarche" may be employed. If young women have not menstruated by the age of 16, they *must* be carefully examined to exclude endocrine and systemic disease and must be checked at least by rectal examination to exclude pelvic tumors.

In an analysis of amenorrhea based on the organs involved, uterine, ovarian, pituitary, and hypothalamic amenorrhea must be considered. No attempt will be made, however, to put all of the clinical varieties of amenorrhea into one or the other of the organ categories, as it is obvious that there must be overlapping in some cases. Furthermore, in any large series, there are always a fair number of unclassifiable cases.

It must also be remembered that the thyroid gland and the adrenals—standing off to the side and affecting the major hypothalamic-pituitary-ovarian-endometrial-genital axis—can cause amenorrhea if organic or functional disease of either these two endocrine organs is present.

#### **Uterine Amenorrhea**

Uterine amenorrhea is associated with an absent endometrium or an endometrium incapable of normal function. The diagnosis of an atrophic endometrium obtained by biopsy does not tell us whether this apparently nonfunctioning tissue is due to some intrinsic endometrial defect or due to a lack of stimulation by ovarian steroids. To test properly for the functioning capacity of the endometrium, a known stimulus must be provided. Estrogen is given. A potentially normal endometrium, virtually no matter how atrophied, should respond with growth, and on cessation of the medication, should respond with so-called "withdrawal bleeding". Therefore, the test for endometrial function is to give adequate estrogen—e.g., conjugated estrogen, 1.25 mgm per day, for 21 days. The *absence* of withdrawal bleeding within the next 10 to 12 days is sufficient to establish the diagnosis of uterine amenorrhea.

The entities usually involved are:

- (a) Congenital hypoplasia;
- (b) The effects of surgery and radiation; and
- (c) Disease—Endometrial sepsis or disease may leave the endometrium too damaged to respond to ovarian hormone stimulation. Tuberculous endometritis may, for example, be the cause of

a nonfunctioning endometrium.

In uterine amenorrhea, by definition, it is almost always impossible to induce menstrual bleeding and, therefore, corrective therapy is rarely indicated. Obviously, there is no help for the congenitally absent uterus, the surgically extirpated uterus, etc. Possibly in disease there may be some hope, but it is remote. Transplant surgery represents the possibility of more hope.

#### **Ovarian Amenorrhea**

The entities involved in ovarian amenorrhea are as follows:

- (a) The menopause—physiologic and precocious;
- (b) Ovarian absence—which is rare and requires no further consideration;
- (c) Ovarian dysgenesis—"Turner's Syndrome"
- (d) Stein-Leventhal Syndrome;
- (e) Destruction by disease—e.g., infection, endometriosis, and tumor.

Ovarian amenorrhea is associated with a relatively inactive endometrium due to failure of the ovaries to respond to gonadotropic stimulation with normal estrogen production. When ovarian failure is absolute, no estrogen is produced and the endometrium atrophies, yet maintains through life its capacity to respond to further estrogen. When estrogen production by the ovaries ceases, an immediate increase in follicle-stimulating hormone (FSH) from the anterior pituitary may be demonstrated in the urine. These, then, are the events that occur in the menopause—either physiologic or precocious: the ovary fails, estrogen production drops, and the level of circulating FSH rises.

From the foregoing, it is clear that the diagnosis of ovarian failure rests on:

- (a) Demonstration of a low level or complete absence of estrogens; and the
- (b) Presence of excessive gonadotropic stimulation.

In order to determine whether we have a low level or complete absence of estrogens, quantitative estrogen assay demands the availability of a biologic laboratory. Endometrial biopsy or vaginal smear techniques very poorly differentiate between a minimal production of estrogen and none at all. However, the use of progesterone immediately distinguishes between *relative* or *absolute* ovarian failure. The simplest test, then, if the endometrium is intact (which is proved by the estrogen test) is to give an adequate amount of progesterone—e.g., Provera, 10 mgm t.i.d. for five

days, or 250 mgm of Delalutin I.M., or 100 mgm of Depo-Provera I.M. This will usually cause bleeding within three to five days if the endometrium has been primed by estrogen. If bleeding occurs, it constitutes evidence of at least *some* ovarian follicular activity. On the other hand, failure to bleed after progesterone demonstrates the absence of *any* estrogen priming and, therefore, an *absolute* ovarian failure. This is the *first part* of the test for ovarian function in amenorrhea. The second part of the test constitutes the *proof* that it is primarily the ovary that is at fault. Quantitative assay of FSH in urine must be done. If it is excessive (as is found in menopause), and if the progesterone test has shown absolute ovarian failure, the diagnosis of *ovarian amenorrhea* is assured.

### Pituitary Amenorrhea

The entities involved in pituitary amenorrhea are:

- (a) Generalized pituitary failure (panhypopituitarism); and
- (b) Specific pituitary failure (lack of gonadotropic hormones only)—“unitropic failure”.

This type of amenorrhea is primarily caused by insufficiency of pituitary gonadotropins. Quantitative assay of the excretion of FSH in the urine differentiates pituitary from ovarian amenorrhea. If the endometrium is intact (as shown by the estrogen administration test) and if no endogenous estrogne is being produced, as shown by lack of bleeding after the administration of progesterone, and the FSH level is lower than normal or zero, then the diagnosis is that of *primary pituitary amenorrhea*.

The entities involved include:

- (a) *Panhypopituitarism*: This syndrome of hypofunction of all the tropic elements of the pituitary may be due to a variety of causes. If the primary pathology is congenital or acquired at an early age, these patients are dwarfed, have retarded bone age, amenorrhea, lack of sexual development, decrease in 17-ketosteroid excretion, decrease in FSH production, and a hypoglycemia unresponsiveness as shown in the insulin-tolerance test, denoting diminished production of the pancreatico-tropic secretions. *In other words, nothing works!*

Any or all of the above findings may be caused to a greater or lesser extent by cysts, tumors, disease, or infarction of the pituitary. Simmonds' Disease, or cachexia, represents an

advanced stage of pituitary hypofunction. Of particular interest is the onset of this syndrome after some difficult deliveries (Sheehan's Syndrome). The probable pathologic explanation of this entity is thrombosis of the pituitary vessels following excessive postpartum hemorrhage. Finally, states of severe malnutrition, particularly lack of protein and Vitamin B, may cause pituitary hypofunction.

- (b) *Lack of Gonadotropic Hormones Only*: Repression or inhibition of the gonadotropic fraction *alone* of the anterior pituitary can be brought about by high titres of estrogen or testosterone. This probably explains the amenorrhea that may attend adrenal hyperplasia or malignancy and some of the endocrine tumors of the ovary. The inhibition of gonadotropic activity which accompanies hyperadrenocorticism may occur at the ovarian rather than at the adenohypophyseal level. Also, exogenous estrogen or testosterone medication may specifically depress gonadotropin output.

Several cases of amenorrhea with complete lack of both estrogen and FSH and, therefore, pituitary in etiology—yet, with no other evidence of pituitary disease—have been reported. It seems that one element only of the anterior pituitary is affected here. This condition has been called “idiopathic lack of follicle-stimulating hormone”; it is a unitropic failure of the pituitary.

It is obvious, then, that amenorrhea may be the presenting complaint in the course of the development of panhypopituitarism from tumor or disease of the brain stem. This group of etiologic causes then emphasizes the importance of differential diagnosis of an abnormal lack of menses.

If the FSH level is below normal or zero, it becomes necessary to test for a high output of steroids that may suggest the presence of masculinizing or feminizing tumors of the ovary or adrenal gland, as well as to evaluate carefully by neurologic examination visual fields, skull x-rays, and the like, the possibility of growth or cyst impinging on the sella turcica, with erosion of the clinoid process being the most important roentgenologic clue. It is also critical to remember that not only suprasellar lesions are to be considered. Amenorrhea is present in approximately half of the instances of such lesions as internal carotid artery aneurysm, tumors of the third ventricle, gliomas

of the optic chiasm, and meningiomas on the floor of the anterior fossa.

For diagnosis of panhypopituitarism, tests for the function of the thyroid, adrenal glands, and pancreas are indicated. Treatment of the amenorrhea *per se* is *unimportant*; diagnosis and management of the etiologic cause are *vital*.

#### Hypothalamic Amenorrhea

Hypothalamic amenorrhea is characterized by *estrogen lack* in the presence of *normal levels of FSH*. The entities involved are:

- (a) Organic lesions;
- (b) Psychogenic states.

Hypothalamic amenorrhea is probably caused by a lack of luteinizing hormone due to an interference in the hypothalamus with the mechanism controlling its release. Originally, it was thought that ovarian estrogen production depended solely on the presence of FSH. However, we now know that no *active* estrogen is produced *unless* pure FSH is supplemented by small amounts of LH. Ovulation is probably induced by a change in the FSH:LH ratio, in favor of the latter. Further, it has been shown that corpus luteum function as evidenced by progesterone secretion cannot be activated by these two hormones alone, but demands a third pituitary gonadotropin, known as the luteotropic factor, which is closely allied to, if not the same as, prolactin. Since there is considerable animal and human evidence that release of luteinizing hormone from the pituitary is controlled by the hypothalamus, it would seem that interference with the hypothalamic-pituitary pathways blocks release of LH and, hence, absence of active estrogen in these cases. Exactly how the hypothalamus controls the pituitary is uncertain but it, most probably, is a neuro-hormonal type of control. Unfortunately, satisfactory methods for the bioassay of LH, while available, have not been sufficiently standardized to permit statistically valid conclusions.

Therefore, to diagnose this entity, tests:

- (a) Must show that the endometrium is intact—estrogen withdrawal bleeding;
- (b) Must show that the ovaries are not producing estrogen, as evidenced by failure to bleed after progesterone withdrawal;
- (c) Must show that the level of FSH is within normal limits—not increased, as in ovarian failure; and not decreased, as in pituitary failure.

The diagnosis thus rests on elimination of the other more clearly defined deficiencies, as it is not

yet possible to accurately assay quantitatively the luteinizing hormone.

Cases of "normal FSH amenorrhea", which is just another name for hypothalamic amenorrhea, are not uncommon. The progesterone test offers a first clue. Those women who do not bleed after adequate progesterone and whose endometrium is intact and who do not have an altered FSH level constitute a puzzling problem. They are generally young, healthy women, and the amenorrhea often appears suddenly after some years of regular menses.

The suggestion that emotional or psychiatric trauma can sometimes block the release of LH from the pituitary is supported only by a history of emotional tension and, in some cases, by the return of menses consequent upon relief from psychic strain.

Hormone therapy, in general, is unavailing. Reassurance and an inquiry into the emotional and sexual adjustment of these individuals appear to be the indicated approach for therapy. Psychiatric assistance may be required.

#### Thyroid and Adrenal Glands

Next, we must consider the role of the thyroid and adrenal glands, impressively standing to the side of the hypothalamic-pituitary-ovarian-endometrial axis.

Hyperthyroidism is more often the cause of amenorrhea than is hypothyroidism, although the latter does produce amenorrhea in the older adolescent and occasionally in the adult. This does not justify the indiscriminate use of thyroid substance in every amenorrheal patient. Except in the occasional adolescent girl and in the few cases of true hypothyroidism, there is little place for thyroid treatment in the management of amenorrhea. There should be concurrent agreement in at least two of the presently available thyroid-function tests before such treatment is prescribed.

Only a brief consideration of the important role of the adrenal glands in the causation of amenorrhea and the value of adrenocortical hormone in the management of amenorrhea will be presented. A 17-ketosteroid, 17-ketogenic steroid determination and pregnanetriol determination should be performed in almost all instances of amenorrhea. Specific attention should be directed to the classic congenital adrenogenital syndrome, in which pregnanetriol is elevated, and the very important, relatively newly recognized "acquired post-pubescent adreno-genital syndrome." Undoubted-

ly, there are a vast number of unrecognized cases of this latter entity.

I acknowledge the lack of discussion in this presentation of the fascinating developments in terms of the newer agents to induce ovulation. Previously, we taught that there was no effective provocateur of ovulation. Such is not now the case. We now have HMG (human menopausal gonadotropin), as well as chlomiphene. We simply cannot consider the role of these exciting new agents adequately in this manuscript, but their great importance is obvious.

In all amenorrhea patients, general treatment principles should not be forgotten:

- (a) weight—obesity and underweight;
- (b) the search for systemic disease;
- (c) anemia;
- (d) disordered kidney function as indicated by albuminuria, pyuria, and hematuria—should be particularly observed and attempts made at correction.

It would seem unnecessary to emphasize the importance of a complete history and physical examination in all of these individuals, but the number of patients in whom these simple procedures have been totally ignored by a referring physician is disturbing. Vaginal smear techniques and endometrial biopsy techniques have certain limited value in the management of amenorrhea.

Additionally, it is incumbent upon the physician to determine the nuclear sex chromatin and karyotype of almost all patients who present with the problem of amenorrhea. Genetic analysis may well suggest culdoscopy and, possibly, laparotomy with gonadal biopsy in a far greater number of these cases than has hitherto been recognized.

I wish to conclude with a brief comment regarding prognosis. In primary amenorrhea, only about thirty percent of the individuals will subsequently menstruate with any reasonable degree of regularity. The failures in the primary group (approximately seventy percent) are primarily due to either chromosomal or developmental errors.

In secondary amenorrhea, it has been estimated that in the age group from 13 to 22, the recovery rate is approximately thirty-six percent, and in the age group 20 to 35, the recovery rate is fifty percent. Prognosis will improve in the secondary group with wider usage of the newer techniques and medications to which I have referred.

#### **Summary**

There are specific and valid indications for in-in others, there is no justification for such efforts. For those few in whom this complaint is a presenting symptom of a serious disorder, it is imperative to follow a logical sequence of tests in inducing menses in some cases of amenorrhea, but establishing the correct anatomic diagnosis.



# Bone Marrow Transplants\*

Joseph W. Ferrebee, M.D.\*\*

**T**ransplants of marrow,<sup>1</sup> if they could be done successfully, would be welcome in restoring hematopoiesis in subjects whose own marrow has become abnormal as in leukemia. Experience has shown that transplants of marrow can be made in man but only in some circumstances and experience also has shown that there are dangers that must be weighed when considering whether or not to try this therapy.

Marrow is transplanted usually by the intravenous infusion of suspensions of marrow cells. These suspensions may be made by gently dispersing samples of fresh heparinized marrow that have been aspirated at biopsy, or the suspensions may be prepared from larger collections of marrow that have been obtained from cadavers an hour or so after death. The cells may be infused immediately after their collection or administration may be delayed and the suspensions may be stored for a few hours at room or at ice-box temperature or for periods of months at -80° C. Since glucose, and other metabolites, are rapidly metabolized by marrow, collections are made advisedly in isotonic nutrient media to which some heparinized blood has been added, preferably blood from the intended recipient. When the suspensions are to be stored at low temperature, dimethyl sulfoxide should be added to a concentration of 10 percent, to lessen damage from the crystallization of intracellular water. With frozen samples, rapid thawing followed by immediate infusion is important. With all samples care must be taken to ensure that suspensions are well dispersed and free from excessive agglomerates of fat at the time of administration. When appropriately handled, infusions containing 5 to 25 billion nucleated cells in a few hundred milliliters of medium may be given intravenously in a matter of minutes without adverse reaction. The infused cells in large percentage "home" to appropriate sites in the marrow spaces of the bones and to the spleen and to the lymph nodes. There they set up colonies of hematopoiesis and lymphopoiesis. Division time is of the order of 20 hours and when conditions are favorable and histocompatibility is good, significant numbers of white cells, platelets and reticulocytes

begin to appear in the peripheral circulation in a matter of a few days.

Some examples in experimental animals may serve to illustrate the problems that may be expected in patients.

If a dog is exposed to 750 to 1500 roentgens of total-body irradiation, the marrow becomes aplastic and the white cell count and platelet count fall to null levels in a few days. Antibiotics and much transfusion of fresh blood and of platelet and white cell packs are needed to control capillary bleeding and infection. Treatment is long-continued and troublesome and the likelihood of death from hemorrhage or infection is great. But if this is avoided, the marrow will regenerate in a month or so from elements that have not been completely destroyed by the exposure to radiation. A rather similar state of affairs occurs in the aplasia occasioned by drug or chemotherapy.

A slow return to normal hematopoiesis after 8 weeks of supportive therapy has been observed in a dog after exposure to 1400 roentgens. A similar slow recovery has been observed in a few patients exposed to somewhat lower doses of radiation. The point is that recovery occurs from the regeneration of autologous remnants, that recovery is slow and that much supportive therapy and good luck are required for the subject to survive the intervening period of aplasia. If the patient is debilitated or infected to begin with, the probability of survival is not great. Survival is favored by adequate and specific antibiotic therapy and by the administration of enormous numbers of normal platelets and white cells. There is a point of danger, however, with the administration of white cells. The polymorphs and macrophages are desirable for their capacity to clear the body of bacteria. The lymphocytes would be useful in restoring immunologic activity were it not for their lamentable capacity to establish colonies of reaction against their host. These reactive colonies of immunologically competent lymphocytes, if produced in too large number, cause areas of necrosis in the liver, changes in the skin with rashes and exfoliation, abnormalities in the intestinal mucosa and in the lymph nodes and these reactions can be lethal. One way of avoiding them is to use fresh blood, platelet packs, or white cells that have been exposed to 1000 roentgens just

\*Presented at the Arkansas Medical Society Annual Meeting, Hot Springs, April 30-May 3, 1967.

\*\*Mary Imogene Bassett Hospital (Affiliated with Columbia University), Cooperstown, New York 13326.

prior to their administration. The irradiation curtails the ability of the lymphocytes to transform and to set up reactions in the patient and the irradiation does not destroy the platelets or ruin the phagocytic ability of the granulocytes and macrophages. Transfusion of irradiated fresh heparinized blood was what was used in maintaining the dog whose recovery was cited.

If on the other hand, there is histocompatible marrow available for implantation in the irradiated subject, preferably syngeneic or autologous marrow, and if it is infused, recovery of hematopoiesis instead of being delayed is rapid and the subject speedily returns to normal. White cell counts that have dropped to null levels come up quickly, within a week or two. The same happens with respect to platelet levels and with respect to lymphopoiesis and erythropoiesis. The subject regains normal hematologic and immunologic status promptly and is rarely critically ill in the process of so doing. Dogs that were exposed to 1000 to 1500 roentgens and then given infusion of their own marrows had rapid restoration of this type. The marrow for infusion had been aspirated and stored in the frozen state prior to the exposure of the animals to radiation.

Alternatively, instead of an infusion of marrow, the irradiated subject can be given an infusion of a suspension of his own white cells that had been removed from his peripheral blood and stored in the frozen state prior to his exposure to radiation. Stem cells present in these white cell collections "home" to appropriate sites in the bones following their intravenous infusion, and hematopoiesis is promptly reestablished just as with infusions of marrow. The rates of return of peripheral white blood cell counts were comparable in a series of dogs that had been exposed to 1000 to 1500 roentgens and then given either an infusion of previously stored autologous marrow or an infusion of previously stored autologous white cells collected from the peripheral blood. If white cells are used instead of marrow, approximately 10 billion are required for a 10 kilogram animal. If marrow is used, 1 billion may suffice. The difference in number reflects the difference in numbers of stem cells present in marrow and in peripheral blood.

If no autologous or syngeneic source of stem cells is available, recourse may be had to donors of marrow of less compatible degree. Then one begins to see the effects caused in the irradiated

subject by differences in the degree of histocompatibility existing between donor and recipient.

In a series of dogs exposed to 1200 roentgens and given infusions of marrow from donors of varying degrees of histocompatibility, the restoration of hematopoiesis was nil in some animals, a little in others, temporary in some, permanent in others, but associated with lethal reaction. It was satisfactory, without reaction and permanent in a few, roughly in 30 to 40 percent of the cases. These favored animals who happened to have received marrow from relatively histocompatible donors became true chimeras. They showed the red cell types, the white cell sex characteristics, and the blood cell karyotypes of their donors. They accepted transplants of skin and of lung and kidney from the donor of marrow or from animals of the same histocompatibility characteristics as the donor of marrow. The general appearance of the chimeras was normal. Their hair was prematurely grey. Their period of fertility was shortened, but the pups produced were normal.

The problem, with transplants of marrow in patients, comes in deciding whether or not to try this therapy. Transplants are useful in some situations but they carry dangers, aside from those of administrative procedure. The consideration of first importance is the question of the histocompatibility of the donor and the recipient. The cells of marrow that are infused will not grow well or establish much hematopoiesis if they are not infused into a histocompatible subject. If given to an identical twin with aplasia, they will grow very well, provided of course that the marrow toxic agents that caused the aplasia in the first place are no longer active. Dr. E. D. Thomas has shown that there was a gratifying return to normal after infusion of histocompatible marrow in some instances in twins whose pancytopenia was of unknown or recent drug origin.<sup>2</sup> In others there was not. Clear examples of the utility of transplanting histocompatible marrow were seen in twins one of whom was exposed to generalized radiation and the other used as a donor.<sup>3</sup> The irradiated twin in each instance was a leukemic patient whose exposure to radiation was part of his treatment of terminal leukemia. The restorations of hematopoiesis that were obtained indicated that the injury to blood formation that is caused in man by serious general exposure to radiation can be treated successfully by the infusion of histocompatible marrow. This may be either that taken from a twin

or that obtained in an autologous sample of marrow that is stored at low temperature prior to the exposure to radiation.

The observations in the leukemic patients did little to encourage the notion that intensive radiation, or chemical therapy, followed by restorative infusion of normal marrow might be useful in eradicating the disease. Leukemia recurred with discouraging promptness in the twins that were irradiated and given transplants from their normal partners. This may be illustrated by the hematologic events observed in a leukemic man of who was exposed to an air dose of 1600 roentgens and then given infusions of marrow that Dr. Thomas had aspirated from the patient's normal identical twin. As in some seriously ill and terminal patients with leukemia, this man's platelets and normal granulocytes were at essentially null levels even prior to radiation. Return to normal levels following infusion of compatible marrow was somewhat delayed, possibly because the newly appearing cells and platelets were rapidly expended in making up their deficits. But that new cells were being produced in about the expected period of 8 to 10 days was seen from the appearance at this time of a few normal granulocytes and reticulocytes and a gradual trend upward in the platelet count. This previously terminal patient left the hospital in six weeks without detected trace of leukemia, drove his own car a 1000 miles home, felt well and died of a recurrence of leukemia two months later.

To control leukemia something more is needed than just radiation and the transplantation of histocompatible marrow. Studies in animals suggest that what is needed is implantation of marrow that is different from the patient's and is resistant to the leukemia virus. Here problems multiply. How does one persuade allogeneic and moderately histoincompatible marrow to implant, and once implanted how does one prevent this marrow from reacting against its host and producing a series of serious secondary syndromes: nutritional wasting and chronic infection with pathologic changes in liver, skin, and intestinal mucosa. The answers are not clear. Something can be done to grade the severity of the anticipated reaction and to increase the probability of implantation by choosing donors and recipients that are relatively histocompatible. This can be achieved with variable success by using donors that are members of the patient's own family, preferably those whose

erythrocytic and leucocytic cell types most closely resemble those of the patient.

The erythrocytic types seem not to be of controlling importance in themselves but a considerable similarity in them suggests a probability that a parallel similarity may be present in other and more important cellular antigens. These latter, the so-called transplantation antigens, can be assessed more directly by typing the peripheral blood leucocytes. Sera for so doing are available to a limited extent. They are incomplete in spectrum. They do not give a full answer but they can be used to suggest a preference for one donor over another. Mathé in Paris has irradiated a series of leukemic patients and given each marrow from several near family relatives.<sup>4</sup> Successful transplantation was achieved in several instances. The marrow implanted could be shown to be that of the donor who on the typing tests had shown the greatest evidence of histocompatibility with the patient. In those instances where compatibility was fairly good, but not complete, a mild but tolerable reaction occurred and there was a remission of the leukemia for 2 years. Then the patient died of encephalitis due to herpes zoster. In other patients successful implantation of marrow was obtained but the reaction of the foreign marrow against the patient was so severe that death occurred in a matter of weeks, with exfoliative dermatitis and fulminant infection. In still others no implantation occurred and the patients died of post-radiative marrow aplasia.

One must conclude therefore that the transplantation of marrow from one person to another requires a favorable degree of histocompatibility in the donor, a degree of immunologic unreactivity in the recipient, and that selecting just the right degree of compatibility and incompatibility to help in the treatment of leukemia is very difficult.

This is about what Drs. Beard, Barnhard, Ross, and Conlin concluded 10 years ago as a result of their experience with radiation and marrow implantation in a young patient with leukemia at the Arkansas Medical Center in Little Rock.<sup>5</sup> The problem of irradiating the patient enough to kill the leukemia and enough to destroy his ability to react against a graft of foreign marrow, without meanwhile killing him in the process, is difficult enough. When one adds the problem of selecting a donor whose marrow will be accepted and whose lymphocytes will react somewhat against the pa-

tient, enough to finish off his leukemia, but not enough to kill him, one really just about exceeds present day likelihood of over-all success.

The usefulness of transplants of marrow in treating aplasia of exogenous origin in otherwise normal individuals is another matter. Provided the recipient is immunologically unreactive as well as aplastic, the problem is purely that of getting a donor of adequate histocompatibility. The restoration of hematopoiesis observed in the irradiated twins and the restoration in the subjects that were given samples of their own marrow that had been stored prior to radiation exposure, indicate that the transplantation of histocompatible marrow is an excellent method for shortening the period of severe aplasia that follows exposure to radiation. When no stored sample of autologous marrow is available and when there is no twin, recourse may be had to a transplant from several closely related family members, particularly if typing for histocompatibility shows that a good probability of compatibility exists. Here, however, problems appear again. Typing for histocompatibility is not a settled art. The use of multiple donors in an effort to hit one that is compatible is not without danger of complicated reaction and failure. Control of the reaction of marrow

grafts against their host has not been achieved in man. In animals some control has been possible by the early use of anti-metabolites such as methotrexate and phosphoramide. We are getting better with these things but have not yet arrived at a point of adequate clinical applicability. When the histocompatibility situation is not clear and when the patient's ability to recover spontaneously is not known or is probable, the treatment of choice may therefore still be conservative, with isolation from infection, antibiotics, supportive transfusion, and fresh and irradiated platelet and white cell packs in adequate number.

#### BIBLIOGRAPHY

1. Pegg, D. E., "Bone Marrow Transplantation", Year Book Medical Publishers, Inc., Chicago, 1966.
2. Pillow, R. T., Epstein, R. B., Buckner, C. D., Giblett, E. R. and Thomas, E. D., Treatment of Bone-Marrow Failure by Isogenic Marrow Infusion, *New England Journal of Medicine*, 275:94-97, 1966.
3. Thomas, E. D., Bone Marrow Transplantation in Man from Diagnosis and Treatment of Acute Radiation Injury, 1961, Geneva, World Health Organization, pp. 273-288.
4. Mathé, G., Amiel, J. L., Schwarzenberg, L., Cattan, A., and Schneider, M., Adoptive Immunotherapy of Acute Leukemia: Experimental and Clinical Results, *Cancer Research*, 25:1525-1531, 1965.
5. Beard, A. G., Barnhard, H., Ross, W., and Conlin, D., Acute Leukemia Treated by Irradiation and Marrow Transplant, *J. Pediatrics*, 55:42, 1959.



#### **Coxsackie B Viral Myocarditis and Valvulitis Identified in Routine Autopsy Specimens by Immunofluorescent Techniques**

G. E. Burch et al (1430 Tulane Ave, New Orleans) *Amer Heart J* 74:13-23 (July) 1967

Heart tissues from 55 routine autopsies were studied by immunofluorescent antibody techniques. Coxsackie virus B antigens were found in the myocardium in 17 cases (30.90%) and in both the myocardium and mitral valve in 3 cases (5.45%). A chronic focal, interstitial myocarditis was noted in all 17 cases upon routine histological study. A high percentage of positive viral antigen was found in hearts of children (75%) and infants (35.71%). Criteria for positive immunofluorescent identification of antigen consisted of intracytoplasmic localization of the fluorescence in the affected myofibers and in fibrocytes of the mitral valves. Chronic coxsackievirus valvulitis is present in man in certain types of unexplained chronic valvular heart disease.

#### **Pseudoneurotic Schizophrenia: Psychological Test Findings**

L. L. Weingarten and S. Korn (100th St and Fifth Ave, New York) *Arch Gen Psychiat* 17:448-453 (Oct) 1967

The theoretical formulation of Hoch and others on the ambiguous diagnostic category of pseudo-neurotic schizophrenia was supplemented with data derived from comprehensive psychological test batteries. The pattern of ego assets and weaknesses, which is the hallmark of pseudo-neurotic schizophrenia, can be portrayed through data obtained from the Bender Gestalt, figure drawings, Rorschach, Wechsler Adult Intelligence Scale, Thematic Apperception Test, and a short sentence-completion test. Application of these differentiating test clues can enhance recognition and insure appropriate choice of treatment for nesses, which is the hallmark of pseudo-neurotic deceptively intact but vulnerable individuals.

# Enzymes in Diagnosis of Disease

Ralph M. Hartwell, M.D.\*

The use of enzymes in the diagnosis of disease is many years old. One might ask why we are interested to the point of discussing their use at the present time. We, in clinical pathology, are constantly reviewing new procedures and proposed procedures which show promise of being of value from a diagnostic standpoint in clinical medicine. Beyond this, any test which approaches greater specificity than those which we used in the past should also be of value in controlling therapy and from a prognostic point of view. Great strides have been made in the study of enzymes and their application in clinical medicine within the past several years. The procedures which may help narrow the differential diagnosis and be of some therapeutic and prognostic benefit are the ones which we plan to discuss today. Those which have been in common use for many years, such as, the acid and alkaline phosphatase and amylase are well established procedures and will not be considered at this time.

Enzymes are organic catalysts, protein in nature, that alter the rate of a chemical reaction. These proteins are produced in or by living cells and may be present in any of the body fluids. During our studies, we have examined them in serum, plasma, cerebral spinal fluid, serous effusions and as contents of intraabdominal cysts. Because enzymes exist in very small amounts in these fluids, they are measured by their activity rather than their concentration. Their activities are expressed in units with the normal values varying according to the particular procedure which your laboratory might use. The following chart (I) shows a classification of enzymes compiled by the Commission on Enzymes of the International Union of Biochemistry. Of this group, we shall discuss a few in detail, giving examples of their value in diagnosis and prognosis.

It has been our experience that it is advantageous to use a combination of these since there is an overlapping of enzyme production by various tissues. The combinations of the particular procedures which you might use will depend upon the experience of yourself and other members of your medical staff, the size of the hospital or private laboratory performing these procedures and the variety of procedures available. With present methods, it is possible for these determinations to

TABLE I  
CLASSIFICATION OF ENZYMES\*

I. OXIDOREDUCTASES

A. Oxidases

1. Cytochrome oxidase
2. Malate dehydrogenase
3. Isocitrate dehydrogenase
4. Glucose-6-phosphate dehydrogenase
5. Glutamate dehydrogenase
6. Hydroxybutyrate dehydrogenase

II. TRANSFERASES

1. Glutamic oxaloacetate transaminase
2. Glutamic pyruvate transaminase
3. Galactose-1-phosphate uridylyl transferase
4. Transketolase (glyceraldehydes transferase)
5. Ornithine carbamoyltransferase

III. HYDROLASES

A. Esterases

1. Phosphatases, acid and alkaline
2. Cholinesterase
3. Lipase

B. Peptidases

1. Leucine aminopeptidase
2. Trypsin
3. Pepsin

C. Glycosidases

1. Amylose
2. Amylo-1, 6-glucosidase
3. Glucosidase
4. Galactosidase

IV. LYASES

1. Aldolase
2. Glutamate decarboxylase
3. Pyruvate decarboxylase
4. Tryptophan decarboxylase

V. ISOMERASES

1. Glucosephosphate isomerase
2. Ribosephosphate isomerase

\*Adapted from: *Report of the Commission on Enzymes of the International Union of Biochemistry*. Pergamon Press, Oxford, London, New York, Paris, 1961.

be made by colorimetric methods for which equipment is available in most laboratories. It is also possible to perform them by ultraviolet methods which vary from markedly complicated to rather simple in the equipment.

We shall pick several from this group which are most commonly used and discuss their value in clinical medicine. The first of these is the aldolase which is present principally in skeletal muscle and in the heart. This is a valuable test in the differential diagnosis of progressive muscular dystrophy since normal values are observed in neurogenic muscular atrophy, myotonic dystrophy, poliomyelitis and other muscular diseases of nervous origin. We have found values from 5-20 times above normal in children with progressive muscular dystrophy. Slightly elevated values are also found in mothers of some of these children. According to the literature there is no elevation in the blood of the father. Aldolase is also ele-

\*2004 Tulane Ave., New Orleans, Louisiana.

vated in myocardial infarction but because the test is more complicated than others of equal value, it is not used as a routine for this purpose. Aldolase is found in the liver, but is elevated only in cases of severe liver cell damage and is of insufficient specificity to be of value in this area.

*Cholinesterase* determination is of great value in the diagnosis of organic phosphorus insecticide poisoning. In these cases there is a dramatic fall in the level in both the serum and the red blood cells which correlates very well with the clinical picture seen in this type of intoxication. It is not a routine procedure in most laboratories, being used only in emergency situations, since insecticide poisoning cases, fortunately, are seldom seen. Cholinesterase is also decreased in liver disease; however, the procedure is too involved and too expensive to be used in this type of investigation.

*Glucose-6-phosphate dehydrogenase* is found in the erythrocyte, spleen, liver and bone marrow. It is of clinical value in the detection of an erythrocyte abnormality in individuals who are susceptible to the development of hemolytic anemia from certain viral or bacterial infections and with the administration of a variety of drugs. The most characteristic clinical picture seen with a deficiency of this enzyme is favism in which the individual develops a severe hemolytic anemia following the ingestion or contact with the fava bean. It is a determination which is not frequently used, but is of great value in making a specific diagnosis of the inability of the red blood cells to properly utilize glucose.

*Glutamic oxaloacetic transaminase (GOT)* is present in the heart, liver and skeletal muscle. It is one of the first enzymes to be elevated following muscular damage as in myocardial infarction or trauma to skeletal muscles. Its continued presence in increased amounts in the blood stream is dependent upon continued damage or death of muscle tissue. It is one of the more frequently used enzyme determinations for the diagnosis of myocardial infarction because of its rapid elevation which often precedes electrocardiographic findings by 12-18 hours. Combined with a clinical differential diagnosis, it has been found to be very satisfactory in the hands of most clinicians. If the first determination is made more than 24 hours after the onset of pain, the level which is obtained may be on the "down" side of the curve since a single peak may be reached as early as 12 hours after the onset of infarction. Other enzymes

determinations have a later peak and are also of value in the diagnosis of myocardial infarction. While the SGOT is elevated in liver disease, it does not reach the height of other enzyme determinations and consequently, is of less value than others we shall discuss later. It does remain elevated as long as liver cell damage continues, as do other, more specific enzymes. There is frequently a moderate elevation in cirrhosis of the liver and in metastatic malignancy, especially with metastasis to the liver. We found no elevation in cases of leukemia, Hodgkin's disease or in individuals with tumors of bone.

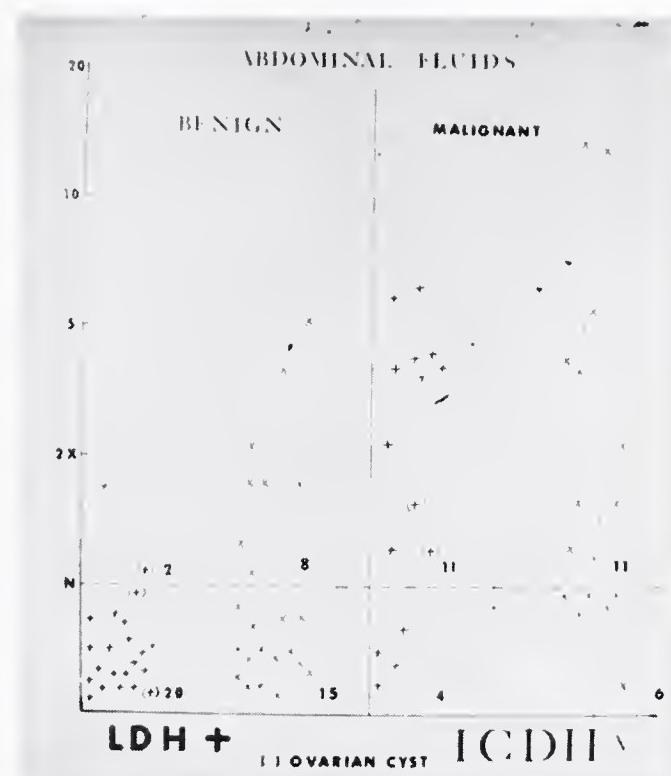
The *glutamic pyruvic transminase (GPT)* is found, principally in the liver with smaller amounts in the heart. We have found it to be of value in the diagnosis or in following cases of myocardial infarction. It is of value in following the course of hepatitis of viral origin and is seen elevated to a greater degree than the SGOT in extra hepatic biliary obstruction. In an occasional case of leukemia or Hodgkin's disease we have found an elevation of the SGPT and these were thought to be the result of infiltration of the liver.

*Isocitric dehydrogenase (ICD)* is found principally in the liver and in our experience has been the best enzymatic determination for evidence of liver disease. I refer to liver cell damage from viral hepatitis and metastasis disease to the liver and not to extra hepatic biliary obstruction. With the upper limit of normal by the methods used in our laboratory, of 200 to 250, we have encountered values as high as 8000 units, one of which will be shown in a chart of a fatal case of hepatitis. Its sensitivity to liver damage is evidence by the fact that with protein deficient diet moderate elevations of this enzyme have been demonstrated. In viral hepatitis, there is usually a return to near normal in 5-10 days in the benign cases which have a fairly rapid recovery. An elevated level may persist for 2-4 months in chronic cases. A rapid rise and very rapid fall is usually accompanied by death. This is seen in a yellow atrophy, eclampsia and in fatal cases of viral hepatitis. We have found the ICD to be elevated in over 50% of cases of malignancy with metastasis to the liver. In cirrhosis, there is a normal or slightly elevated value. In extra hepatic obstructive jaundice, in the early stages, the ICD is normal and only if the obstruction continues to the point of liver cell damage will the ICD become elevated.

*Lactic dehydrogenase (LDH)* is found, prin-

cipally, in the heart, skeletal muscle, liver and to a lesser extent in the kidney. We have found this enzyme to be of value in the diagnosis and follow-up of cases of myocardial infarction. It becomes elevated 24-48 hours after the rise of SGOT, but the elevation persists from 7-12 days in severe cases. In less severe cases, it may return to normal in 3-5 days. Because some of the patients enter the hospital as much as 48 hours after the onset of infarction, the SGOT may have returned to normal while the LDH will remain elevated. Because of this persistent elevation, we believe it to be of value in both the diagnosis of myocardial infarction. We have found it to be normal in cases of congested heart failure, in bundle branch block and other cardiac conditions where actual necrosis of muscle does not occur. We have found the use of LDH, along with ICD determinations, to be of great value in the differential diagnosis of hepatic disease. The LDH is moderately to markedly elevated in cases of extra hepatic biliary obstruction and the ICD is usually normal, especially early in the course of disease. These 2 enzymes have replaced older and we believe more obsolete procedures in the liver profile used in our hospital. The LDH is usually elevated in cases of acute myelogenous leukemia and frequently elevated in chronic myelogenous and in acute lymphatic leukemia. In our experience, the elevations have varied from 2-20 times normal in the acute cases and up to 10 times the normal value in chronic myeloid leukemia. Acute monocytic leukemia may show increases up to 10 times the upper limit of normal. This has been of some value in the following course of leukemia cases with elevations occurring early in the course of a relapse and a decline of the LDH values occurring with remissions. The LDH along with the SGOT are of value in the diagnosis of non-fatal cases of pulmonary embolism in which there is an elevation of LDH with a normal SGOT. In these cases, in order to use this as a differential diagnostic aid, one has to rule out the possibility of myocardial infarction which would also give an elevation of SGOT.

The LDH and ICD have been used in our laboratory to study a large number of body fluids. Similar studies were made with SGOT and SGPT, but were found to be of no value. For this study we did LDH and ICD determinations on 77 abdominal fluids and also did cytologic examination on these fluids. The next slide shows 22 deter-

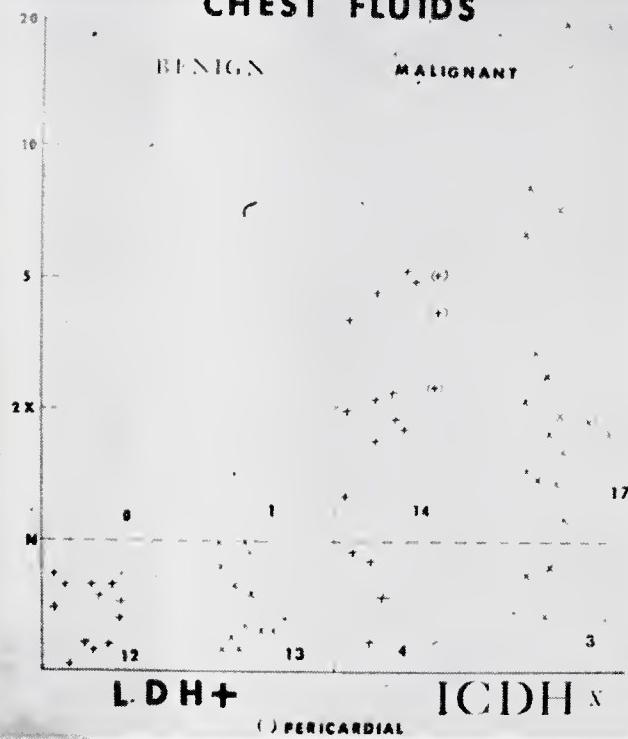


nations on fluids which were cytologically benign. Of these, 20 had normal values and only 2 were in the abnormal range. Of 23 fluids, on which the ICD was determined, 15 were within the normal range and 8 in the abnormal range. These also were cytologically benign fluids. The increased number in the abnormal ICD range we believe may be the result of slight hemolysis of red cells in the fluids which have a high ICD content. Of 15 fluids which were malignant from a cytologic standpoint, 11 were in the abnormal LDH range and 4 were normal. Of 17 fluids on which the ICD was determined, 11 were in the abnormal range and 6 were normal. The next slide shows a similar study on chest fluids. Of 12 benign chest fluids all LDH determinations were within normal range. Of 14 benign chest fluids, 13 ICD determinations were within normal, one was abnormal. With cytologically malignant fluids, 14 showed an elevated LDH and 4 showed the determinations to be within normal value. Similarly, 17 ICD determinations were in the abnormal range and 3 were normal. This is a correlation of approximately 70% on abdominal fluids and over 80% on pleural fluids. This study was continued for over 2 years and approximately 225 fluids were studied by this method with the same result. The serum levels were also studied in patients with malignancies. As a result of this study, we found approximately 75% to have elevation of LDH and

**CHEST FLUIDS**

BENIGN

MALIGNANT



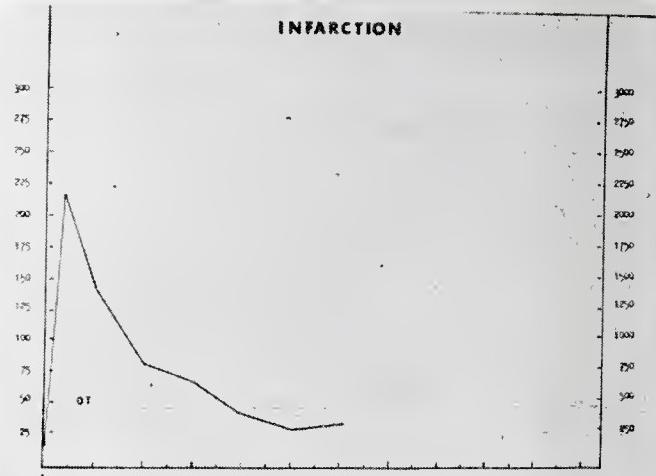
ICD levels of varying degree. While these increases were observed, they were of no value in being specific for the diagnosis of malignancy and were of no value in determining the site or type of tumor present. We also studied the ICD and LDH in spinal fluid, finding that metastasis to the central nervous system and some primary tumors of the central nervous system gave consistent elevations of the ICD. The LDH, which has a lower value in the spinal fluid than in the blood serum, was found to be elevated in meningitis, cerebral infarction and a variety of other central nervous system diseases. When both the LDH and ICD were normal, continued clinical investigation usually failed to reveal serious disease in the central nervous system. In the examination of serous effusion and spinal fluid, as with blood serum, hemolysis is to be avoided when these procedures are performed. In effusions, pyogenic fluids are to be avoided because the white cells are rich in enzymes and false elevations will result.

*Leucine amino peptidase* is found in the pancreas and liver and in our experience, has been moderately to markedly elevated with pancreatitis, carcinoma of the pancreas and obstructive jaundice. The greatest elevations have been seen with carcinoma of the pancreas and obstructive jaundice. Because of this, in the absence of jaundice, it is a reasonably reliable diagnostic aid when one suspects malignancy arising in the pancreas. This is another enzyme not frequently used, but

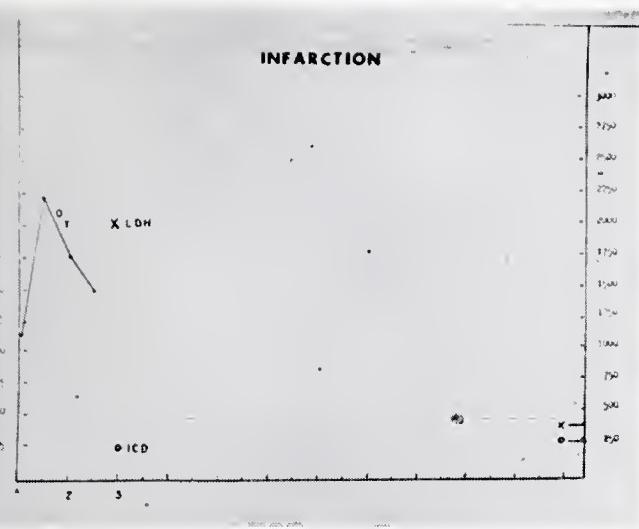
of considerable value when needed.

*Creatine Phosphokinase* is found in the skeletal muscle, heart and brain. Like the aldolase, it is of great value in the diagnosis of progressive muscular dystrophy. Recent improvements in procedures have resulted in this test being more reliable and more specific than the aldolase. It is also of greater specificity than the SGOT in cases of myocardial infarction. Like the SGOT, it is present in the blood for only a transient period and may return to normal within 48 hours after the onset of infarction, if the area of muscle damage does not continue to extend. We have been working with the newer procedure and found it to be quite specific for myocardial damage in the absence of skeletal muscle injury. However, its cost, the involved technical procedure and length of time required to perform the test limits its use. In the choice of procedures, one must consider the accuracy and specificity of the procedure first, but must not fail to recognize that the results of the procedure must be returned to the clinician in time to be of value. When clinically comparable results can be obtained, the cost to the patient is of importance in the choice of procedures.

The next slide is one showing repeated SGOT

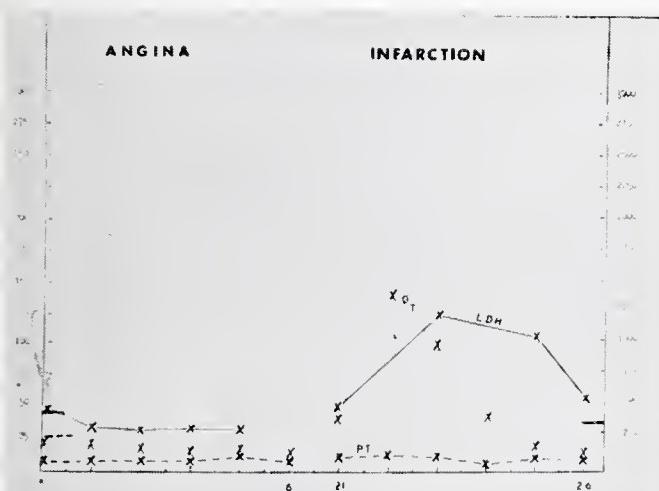


determinations on a case of anterior myocardial infarction. We see the peak at 12 hours after the onset of pain and admission with a fall to approximately 140 units at the end of 24 hours. On the fifth day, the patient had returned to the upper limit of normal and continued an uneventful recovery. The next slide shows a case of myocardial infarction in which the patient entered the hospital from 6 hours after the onset of pain with a level of 115. There was a continued rise during



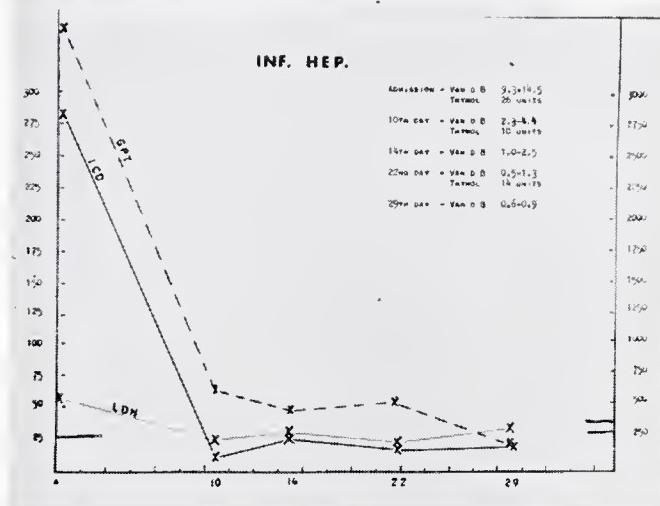
the next 12 hours, after which the fall is seen to be progressing quite rapidly. The lactic dehydrogenase on the third day was 1800, the isocitric dehydrogenase remained within normal limits.

The next slide is shown to emphasize the value of the SGOT and LDH in the diagnosis of myocardial infarction. This patient entered the hos-



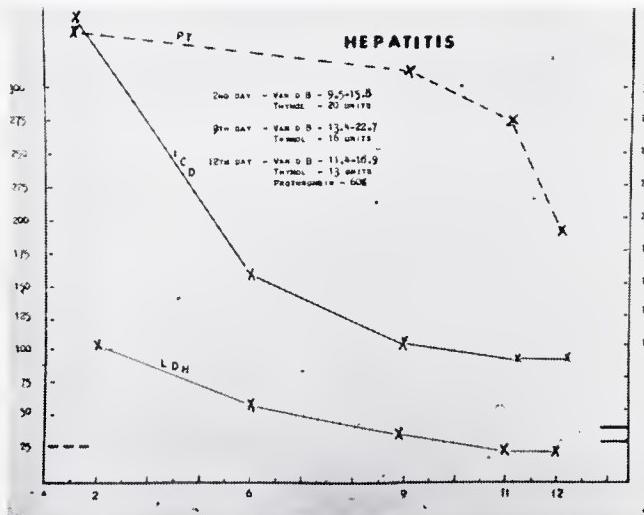
pital with anginal pains which clinically could not be differentiated from infarction. It is our routine that the patient will have an SGOT on admission, followed by 2 more at 12 hour intervals. This gives us 3 determinations in the first 24 hours. You will note from the slide that although the patient remained in the hospital for 6 days and had daily determinations, these were all within the normal range. The patient was discharged with a diagnosis of angina pectoris and remained home for 15 days. She returned 21 days after the first admission with similar pain at which time we see an elevating SGOT. You will note that there is a rapid rise for 24 hours after the onset of infarction and then a fairly rapid fall, returning to normal in 48 hours.

The next slide shows a case of infectious hepatitis. At the time of admission the lactic dehydrogenase was 580, the isocitric 2,800 and the SGPT was 396. During the next 10 days, the iso-



citric fell to the lower limits of normal. The lactic dehydrogenase was well within normal limits and the SGPT was approximately 2½ times normal. During the next 19 days, the lactic and isocitric dehydrogenase remained within normal limits and the SGPT fell to normal between the 22nd and 29th day. The upper right hand corner of the slide shows that the Van den Bergh was 9.3 indirect and 14.5 total on admission, falling to 2.3 and 4.4 on the 10th day. During the same period, the thymol turbidity fell from 26 to 18 units. On the 22nd day, the Van den Bergh was normal, the thymol was still elevated.

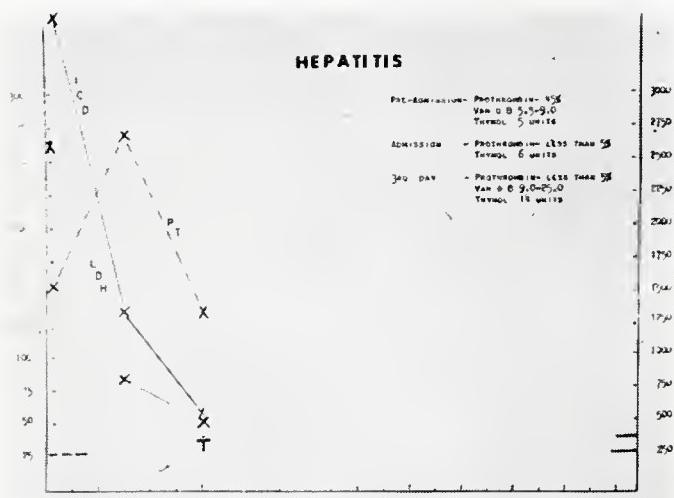
The next slide is a case of hepatitis which developed 6 months following surgery and the trans-



fusion of blood. On the 2nd day of admission, we find the lactic dehydrogenase to be 1000, the isocitric was 4,100 and the SGPT was 1120. During the next 10 days, we find the lactic dehydrogenase

falling to within normal limits, the isocitric falling, but still remaining approximately 3½ times the normal value. On the 12th day, after admission, we find the SGPT starting to fall sharply. In the upper portion of the slide, we find that the patient was admitted with a Van den Bergh of 9.5 indirect and 15.8 mgs. total and a thymol of 20 units. On the 12th day, at which time the isocitric and SGPT had not returned to normal, the Van den Bergh still was markedly elevated. Thymol had decreased to 13 units. This is an example of a case which ran a rather chronic course and is in contrast to the rapid recovery seen in the previous slide.

Our last slide is another case of hepatitis. This



followed surgery with a transfusion 2 months prior to being admitted to our hospital. Enzyme determinations done 2 days prior to admission revealed an SGPT of 1500, a lactic dehydrogenase of 2600 and an isocitric dehydrogenase of 8000. As seen in other cases, the SGPT rises after the dehydrogenases and remains elevated longer. We note that at the time of admission, the lactic dehydrogenase had fallen to 840, the isocitric to 1340. On the 3rd day after admission, we see the continued fall of lactic dehydrogenase to 540 and the isocitric to 600. The SGPT had a precipitous drop to 1375. This demonstrates the fact that a rapid fall of enzymes early in the course of a patient severely ill with hepatitis may well predict a fatal outcome. We also note that the pre-admission prothrombin was only 45% and the total Van den Bergh was 9 mgs. On admission, the prothrombin was less than 5% which was also an indication of severe hepatic damage, especially when combined with the fall of the dehydrogenase enzymes.

We have briefly reviewed some of the enzymes which we believe to be of value as diagnostic and prognostic aides in clinical medicine. Undoubtedly, more enzymes will be discovered in the future and in our humble opinion, more specific procedures will be developed, many of which may well be pathognomonic for specific disorders of the various tissues and organs.



#### Biological Aspects of Inhibition Systems

J. Kagan (Harvard Univ., 33 Kland Street, Cambridge, Mass.) *Amer J. Dis Child* 114:507-512 (Nov) 1967

There is some empirical base to support the suggestion that the tendency to delay, to inhibit, or to process slowly, in contrast to a more rapid tempo, may be one of the fundamental behavioral dimensions in that network of dispositions that are the frame of the structure we call human personality. This dimension has shown a hardness unshared by most other psychological variables. Early students of man noted the differences be-

tween the sanguine and phlegmatic character types long before psychology invented concepts of need affiliation, test anxiety, or obsessive compulsive neurosis. The presence of a set of behaviors in infants that phenotypically resembles the adult dimension of inhibition-impulsivity suggests a partial biological basis for this behavioral complex. As with most variables, inhibition is based on multiple sources—insult to the central nervous system, intrinsic biological constitution, and psychodynamic forces. Impulsivity alone is ambiguous and the task of empirical and theoretical inquiry is to detect its many forms and causes as well as its role in character development.

# **Medicine and the Harmonious Man**

The Honorable Winthrop Rockefeller\*  
Governor of Arkansas

**E**ducation, like medicine, is in a rapid state of flux. Experiments in educational methods are being conducted at all levels of teaching from the elementary to the professional schools, in an effort to increase the efficiency and quality of teaching, and to update the educational needs of our students . . . not only in today's society, but also in the future society in which they will be living and working.

Mastery of a technical field such as medicine does not necessarily make an individual a whole man. We must look to the "Harmonious Man," "a person who is capable of good judgment and can be as valuable in society as he is in his profession." As I stated in a speech to the National Honor Fraternity in Education, "we cannot afford to educate our young men and women in their particular fields, to the exclusion of that knowledge and experience they require as human beings for their own personal and social adjustment." Thus, I believe that any long term changes in medical education must be in concert with changes in educational methods and standards starting at the elementary school level.

Educators have shown us that we have been underestimating the capabilities of our students. Today many high schools teach calculus, advanced chemistry, physics and biology. In the near future, it is conceivable that the courses taught during the first two years of college would be telescoped into the high school curriculum. Some high school subjects are now being discussed in the junior high and elementary schools. (Witness the new math and economics.)

We are in need of re-evaluating the role and scope of the elementary school, for the key to success in high school, college and the professional school lies in the firm foundation obtained in the elementary schools.

By beginning early to develop a "Harmonious Man" in the elementary schools, we will not only be able to produce more students interested in college, but also students interested in the professional schools with a well-rounded background.

In all humility—as often as I make reference to the "harmonious man"—it always gives me pleasure to recognize that the inspiring concept of the

role of education in creating such a man stems from the writings of the late Albert Einstein. In no field of human service is the concept more important than in the practice of medicine, for the physician—more than any other—must have these qualities to understand those whom they serve and those to whom they administer.

Specialization of medical careers has not eliminated that need for study of the humanities and social sciences that will help to develop the "neighbor" quality.

But along with our concerns regarding preparation and training, we must consider the immediate problem of attracting young men and women into the profession, to fulfill the needs of our society both today and tomorrow.

The staggering increase in the population in the next few years will place a stress on education at all levels. In the health professions, we will need more physicians, dentists, nurses, technologists, pharmacists, etc.

This concern for the need of people to enter the health professions was brought out in a report submitted to the Association of American Medical Colleges in 1965 in what has come to be known as the Coggleshall Report. In addition, trends such as increasing use of medical teams in health care with increasing use of institutions as centers of health care were noted.

The Coggleshall Report only expressed a need for medical institutions to experiment in methods of instruction and patient care. On the other hand, the Cope Report, published in 1966, considers some rather radically different curricula, at least in the eyes of the traditional medical educator.

In spite of the far reaching influences of those two reports, they appear to underemphasize the importance of developing the "Harmonious Man." I hope that such was not the intent of those medical educators.

The University of Arkansas Medical School has had a rather high attrition rate in recent years. One medical educator attributed this to the lack of qualified state applicants and the acceptance of a number of high risk students.

However, in the last legislative session of the

\*State Capitol, Little Rock, Arkansas.

Arkansas General Assembly, a bill was passed which permits the acceptance of out-of-state students for entry into our medical school . . . up to a maximum of 15 per cent of the total. This should bring in additional qualified students who will graduate and hopefully set up practice in Arkansas.

The student with potential is available. We must bring out the potential. The available pool of students must be thoroughly developed. Thus, the educational standards must be significantly raised throughout the state, beginning in the elementary level and proceeding through the secondary schools and colleges. More qualified state applicants will then be able to compete, enter and earn degrees in the medical profession.

Finally, we should encourage our graduates to practice in Arkansas. This can be partially accomplished by recruiting Arkansas graduates to fill the internships and residencies available in Arkansas. However, the distressing feature is that only three Arkansas institutions have internship programs whose total number can only accommodate less than half the number of graduates of the University of Arkansas School of Medicine.

Residency programs are even more limited. Good training can be offered in some of the hospitals located in metropolitan areas other than Little Rock and I hope that due consideration will be given to enlarging the internship and residency programs.



#### **Spectrum of Myopathy Associated With Alcoholism: I. Clinical and Laboratory Features**

G. T. Perkoff (St Louis City Hosp, 1515 Lafayette Ave, St. Louis) *Ann Intern Med* 67:481-492 (Sept.) 1967

A spectrum of myopathy is found among chronic alcoholic patients. Studies are reported of 29 alcoholics without muscular symptoms, one additional patient with an acute reversible myopathy with muscle cramps, one patient with gross myoglobinuria, and 10 with chronic myopathy. The patients with acute myopathy had features of chronic myopathy after recovery from their acute abnormalities. The clinical features in them and in the ten patients who presented with chronic myopathy included proximal and diffuse muscle atrophy and weakness, frequently progressive and often associated with muscle tenderness. A more stable form with proximal wasting unassociated with tenderness also was observed. In the acutely ill patients and in the alcoholics without muscular complaints, elevated serum creatine phosphokinase levels and reduced ability to raise blood lactic acid levels in response to exercise were noted. In patients with chronic myopathy the biochemical changes were similar but less striking and less consistent. Abstinence from drinking was associated with improvement in every instance.

#### **Renal Response to Pyrogen in Normotensive and Hypertensive Man**

E. A. Gombos et al (VA Hosp, 50 Irving St., Washington, DC) *Circulation* 36:555-569 (Oct) 1967

Pyrogen, when administered intravenously to normotensive and hypertensive men, produced initially vasoconstriction and subsequently marked renal vasodilatation, both resulting from direct effects on the renal vasculature. The absolute renal plasma flow, both during control observations and at the height of renal hyperemia, was greater in normotensives, but the percentage change was greater in hypertensive subjects. Extraction of p-aminohippurate diminished during renal hyperemia. Medullary renal plasma flow was higher in normotensive subjects both during control observations and at the height of renal hyperemia. Simultaneously with the development of renal hyperemia, sodium excretion increased without alterations in filtered load of sodium and was prompt in its development in normotensives and delayed in hypertensives. This is attributed to a transient, small, yet probably significant decrease in filtered load of sodium during vasoconstriction immediately following the administration of pyrogen. Simultaneously with the development of renal hyperemia, there was in both groups an increase in solute excretion and tubular reabsorption of solute-free water.



STUDIES FROM  
THE UNIVERSITY OF ARKANSAS MEDICAL CENTER  
THE DEPARTMENT OF

# OBSTETRICS AND GYNECOLOGY

WILLIS E. BROWN, M.D., Professor and Chairman  
STACY R. STEPHENS, M.D., EDITOR

## Chronic Tubal Pregnancy

M. Ronald Avery, M.D.\*

Chronic tubal pregnancy may well be termed "the neglected ectopic pregnancy". Because of the lack of conformity to the classical textbook picture, diagnosis is rarely made at the first patient contact, although such a visit frequently results in hospital admission. All too often, these patients become long-term diagnostic problems; for the signs and symptoms of chronic tubal pregnancy may mimic many pathologic and psychosomatic disorders of the female pelvis. Partial tubal rupture may be accompanied by chronic lower pelvic discomfort and a vague menstrual history distorted by multiple bleeding episodes. Shock is usually absent although pelvic tenderness and mass are present.

On the other hand the acute tubal pregnancy associated with abrupt tubal rupture and its classic history of localized pain, shock, bloody peritoneal tap, etc. presents few problems in diagnosis. Proper treatment requires that facilities for operation and emergency supportive care be present.

Past literature is vague and sparse in its description of chronic tubal pregnancy. If discussed at all, it merits merely a passing comment when compared to the diagnosis and management of the more dramatic acute episodes. There is but one article published since 1950 which deals primarily with chronic tubal pregnancy.<sup>1</sup> Even here patients were assigned to the chronic group by exclusion from the acute group.

### Material

During the seventeen year period, 1950-1966, four hundred eighty-six tubal pregnancies were treated at the University of Arkansas Medical Cen-

ter. Of these, 41 or 8.4 per cent were of the chronic variety.

### Results

Thirty-three patients were Negro and eight were Caucasian. These figures represent the normal racial distribution within our institution.

Age and parity are presented in Table I. Patients were evenly distributed among all age groups between 18-45 years. Average parity increased with age as might be expected. Only five patients were experiencing their first gestation.

### Symptoms

The symptoms of chronic tubal pregnancy were quite varied and nonspecific when compared to those seen in classical tubal pregnancy patients. Amenorrhea existed from one to more than six months with an average duration of three months. By far the most common complaints were those of lower abdominal pain (40 patients) and abnormal vaginal bleeding or spotting (39 patients). Other symptoms were chills and fever in twenty-one patients, shoulder pain in five, fainting episodes in two, nausea and vomiting in one, dysuria in one, and pain with defecation in one patient.

### Physical Findings

In contrast to patients with acute ectopic pregnancy, none of the study patients presented in shock. In general, pulse rates were from 100 to 120 per minute, and blood pressures were normal. Fifteen patients presented with temperatures over 100° Fahrenheit even though 50 per cent had been treated elsewhere with antibiotics and then referred to the University of Arkansas Medical Center. Forty patients had lower abdominal tenderness and four of these had rebound tenderness; thirty-nine patients had a pelvic mass of varying

\*University of Arkansas Medical Center Department of Obstetrics and Gynecology, Little Rock, Arkansas.

size; four masses were palpated abdominally. The patients who did not have masses palpable on pelvic examination at the time of admission had pelvic masses described at surgery.

#### Diagnostic Procedures

Thirty-seven of our patients had "chronic ectopic pregnancy" included in the working diagnosis. The quickest and most readily available diagnostic aid was culdocentesis. Twenty-five patients had positive cul-de-sac taps, six had negative taps and ten patients did not have a culdocentesis performed. Thus, our easiest and most accessible aid to diagnosis was of value in slightly over 80 per cent of our patients. Five of ten patients were felt to have ectopic pregnancies and were taken to surgery on the day of admission. No explanation was available as to why the other five patients were not subjected to cul-de-sac investigation.

Pregnancy tests were performed on only ten of the forty-one patients and yielded a 50 per cent positive return. The reluctance to use this procedure is not understandable when thirty-seven patients had an admitting diagnosis of ectopic pregnancy as one of the differentiating entities. Admittedly, a pregnancy test must be accepted for what it is—a laboratory aid to diagnosis, subject to interpretation by the responsible physician.

Radiological evaluation of the abdomen in eleven patients showed a pelvic mass in nine and an associated ileus in four. Eight patients were explored through a posterior colpotomy and one had a failed colpotomy.

#### Laboratory Data

Pre and post-operative hemoglobins were recorded in forty of forty-one patients. The lowest recorded value was 7.2 grams per cent. Twenty patients had values below 10 grams per cent and twenty patients had values above this figure.

Leukocyte counts ranged from 3,600-24,000. Forty per cent were below 10,000, forty per cent were between 10,000 and 15,000 and 20 per cent were above 15,000.

#### Treatment

The surgical procedure depended upon the age

and condition of the patient at the time of surgery. One patient had a partial salpingectomy through a colpotomy followed by a D & C. All other patients had laparotomies. Seven patients had diagnostic colpotomies followed by laparotomy. Colpotomy was attempted without success in one patient.

Salpingectomies were performed in all forty-one patients. These were partial in four, unilateral in twenty-five, and bilateral in twelve. Sixteen hysterectomies were carried out in the better risk patients because of pelvic inflammatory disease or multiparity. Although thirty-three patients required transfusions the average blood replacement was only one and one-half units per patient.

Post-operatively, patients did extremely well; the average hospital stay being only 7.4 days. Morbidity was low and no mortalities occurred. There were two post-operative complications; one patient had peritonitis with a reflux ileus and was discharged on the 11th postoperative day; another patient had a superficial wound dehiscence requiring a 14 day stay.

#### DISCUSSION

The incidence of chronic tubal pregnancy in our series was 8.4 per cent of the tubal pregnancies recorded from 1950 through 1966. The average age of our patients was 30 years with an average parity of three. This was in keeping with the range presented by many authors on ectopic pregnancies in general.<sup>2-9</sup> The average duration of amenorrhea was three months and exemplified the difficulty in diagnosis from the history. Ectopic pregnancies in general were considered to be late after 12 weeks of amenorrhea.

The average duration of symptoms was 4.7 weeks. Typical presenting symptoms were unilateral lower abdominal pain and associated vaginal bleeding following a vague history of amenorrhea. More than 50 per cent of the patients had a history of chills and fever and had been treated with antibiotics prior to their hospital admission. This history was somewhat different from the classical picture presented by acute ectopic pregnancy. On physical examination the typical patient did not present in shock, but did have a moderately rapid pulse. Almost half of these patients were febrile on admission. Abdominal examination demonstrated unilateral lower quadrant tenderness. An occasional patient had associated rebound tenderness. Pelvic examination almost al-

TABLE I

Age (years)	Number of Patients	Average Parity
25 or less	10	1.3
26 - 30	9	2.7
31 - 35	12	3.2
36 or more	10	4.9
TOTAL	41	3.0

Comparison by Age and Average Parity of Patients with Chronic Tubal Pregnancy.

ways revealed a unilateral, tender, pelvic mass. Physical examination was frequently compatible with that of tubo-ovarian abscess.

The most important diagnostic procedure was the cul-de-sac tap. Of the thirty-one patients who had culdocentesis performed, 80 per cent had positive taps. Other helpful procedures used were the pregnancy test, abdominal film, and of course the hemoglobin, hematocrit, and white blood count. Fifty per cent of the patients had a hemoglobin under 10 grams per cent on admission and over half of the patients had a white blood count over 10,000. The x-rays generally were of little value because they mainly confirmed the presence of a pelvic mass which had already been described on pelvic examination. Many of the findings from the history, physical examination, and laboratory examinations were those associated with pelvic infection. Thus, the picture of infection should not rule out the possibility of chronic tubal pregnancy, for this was the rule rather than the exception. Another important diagnostic tool which was utilized in these patients was the posterior colpotomy. Eight patients had colpotomies prior to laparotomy, and one of these had a partial salpingectomy through the colpotomy site without laparotomy. Final diagnosis in many patients was not made until the time of laparotomy.

The extent of pelvic surgery depended upon age, parity, the pathological diagnosis, and the condition of the patient. Most of our patients were in no acute distress, thus they had scheduled procedures. An average stay of 2.8 days prior to surgery typified the difficulty in arriving at a diagnosis. Seventeen patients (41 per cent) had their fertility terminated; sixteen by hysterectomy and one by bilateral salpingectomy. Only three of the hysterectomies were of the subtotal type. Fifty-nine per cent had surgical procedures which in themselves would not sterilize the patient. The figure of 41 per cent is a very high rate of fertility termination when compared with the treatment of acute ectopic pregnancies. No tubal plastic operations were attempted, probably because of the high incidence of pelvic infection.

Delay in diagnosis is an expected occurrence in this pathologic state and the majority of the study patients confirmed this fact. Many of our patients had been seen by a physician on at least one previous occasion within the scope of their present episode. Twenty-seven patients were seen and treated by a physician prior to their admission

at the University of Arkansas Medical Center. Ten had been hospitalized on one occasion prior to their definitive surgery. Twenty-two patients were known to have been treated with antibiotics prior to their hospital admission. It is apparent from this small series that the delay in diagnosis is not completely a fault of the patient but must also lie with the physician himself.

#### SUMMARY AND CONCLUSIONS

1. Forty-one cases of chronic tubal pregnancy were treated at the University of Arkansas Medical Center from 1950 through 1966.
2. Eight and four-tenths per cent of the ectopic pregnancies seen were of the chronic variety.
3. The patient with a chronic tubal pregnancy presented a history of amenorrhea, vaginal bleeding, and unilateral lower quadrant pain. Physical examination revealed a normal blood pressure, moderately rapid pulse, frequent fever, abdominal tenderness, and a unilateral pelvic mass.
4. The most useful diagnostic procedures were culdocentesis and colpotomy.
5. Major operative procedures were well tolerated with little post-operative morbidity or complications.

#### REFERENCES

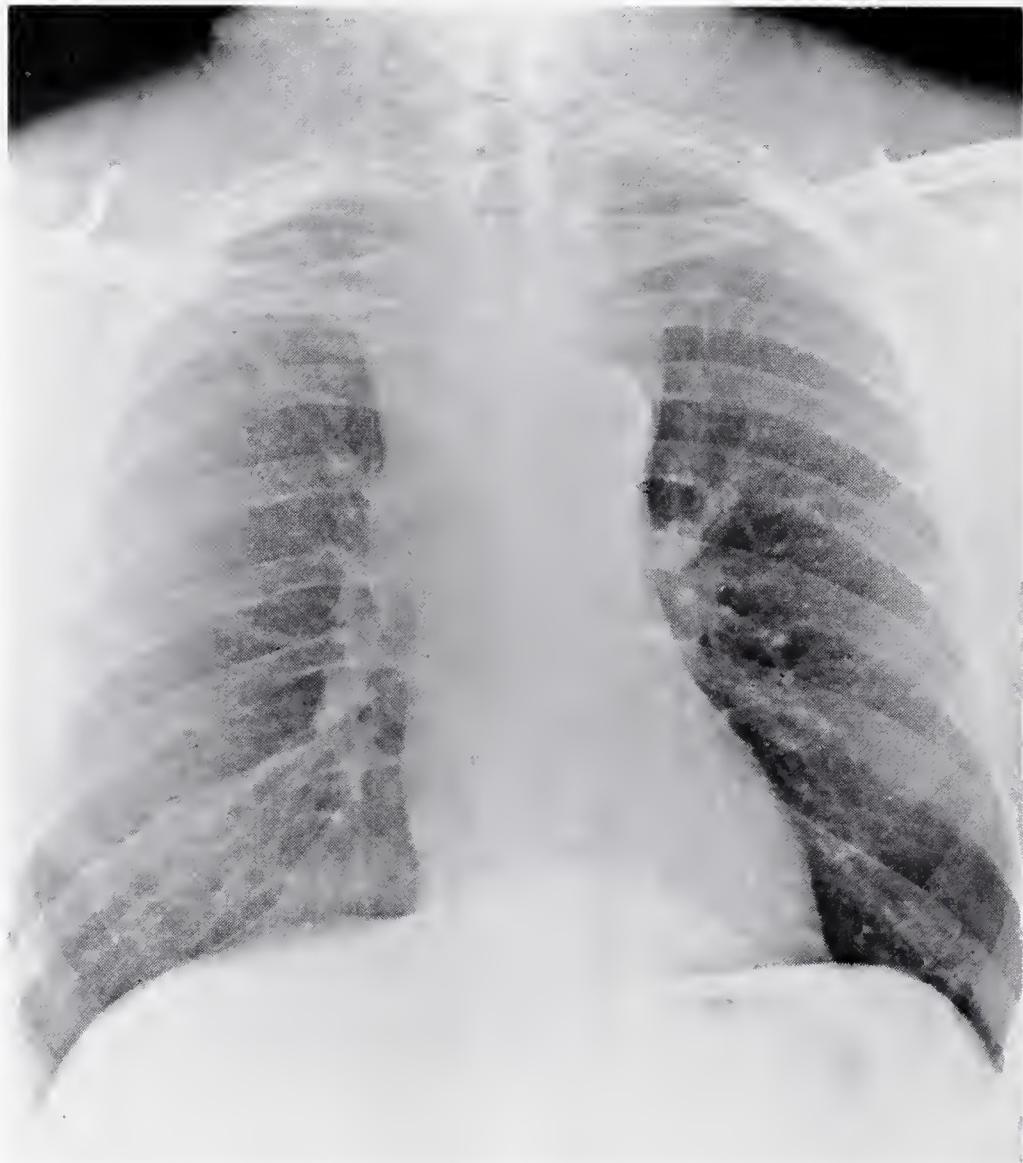
1. Parker, S. L., Jr., Parker, R. T.: "Chronic" Ectopic Tubal Pregnancy. *Amer. J. Obst. & Gynec.* 74:1174-80, 1957.
2. Abrams, J., Farrell, D. M.: Salpingectomy and Salpingoplasty for Tubal Pregnancy: Survey of the Literature. *Obstet. & Gynec.* 24:281-5, 1964.
3. Berlind, Melvyn: Possible Etiology of Contralateral Pain in Ectopic Pregnancies. *Obstet. & Gynec.* 26:280-1, 1965.
4. Bissell, Schuyler, M.: Posterior Colpotomy for Diagnosis. *Western J. Surg.* 70:185-7, 1962.
5. Falls, H. C., Huffman, Merrill, W.: Culdocentesis—A Useful Diagnostic Aid. *Illinois Med. J.*, 125:525-7, 1964.
6. Holley, John C., Jr.: Ectopic Pregnancy: A Review of 507 Cases. *J. Med. Assoc. Georgia.* 53:47-54, 1964.
7. Ingersoll, Francis M.: Operations for Tubal Pregnancy. *Clin. Obstet. & Gynec.* 5:385-60, 1962.
8. Riva, H. L., Kammeraad, L. A., Andrieson, Paul S.: Ectopic Pregnancy: Report of 132 Cases and Comments on the Role of the Culdoscopy in Diagnosis. *Obstet. & Gynec.* 20:189-98, 1962.
9. Schiffer, Morton A.: A Review of 268 Ectopic Pregnancies. *Amer. J. Obstet. & Gynec.* 86:264-70, 1963.

## WHAT IS YOUR DIAGNOSIS?

*Prepared by the*

*Department of Radiology, University of Arkansas  
School of Medicine, Little Rock*

**SEE ANSWER ON PAGE 303**



**HISTORY:** This 46-year-old man was admitted with superior vena cava syndrome. He had had a twenty-pound weight loss in recent weeks. There was a 1½ cm. in diameter firm, fixed node in the posterior triangle of the neck on the left and a 3 x 2 cm. firm node in the left axilla.

## ELECTROCARDIOGRAM

## OF THE MONTH

• • • • • • • • • • • • • • • • • •

AGE: 39 SEX: F BUILD: Stocky BLOOD PRESSURE: 130/80

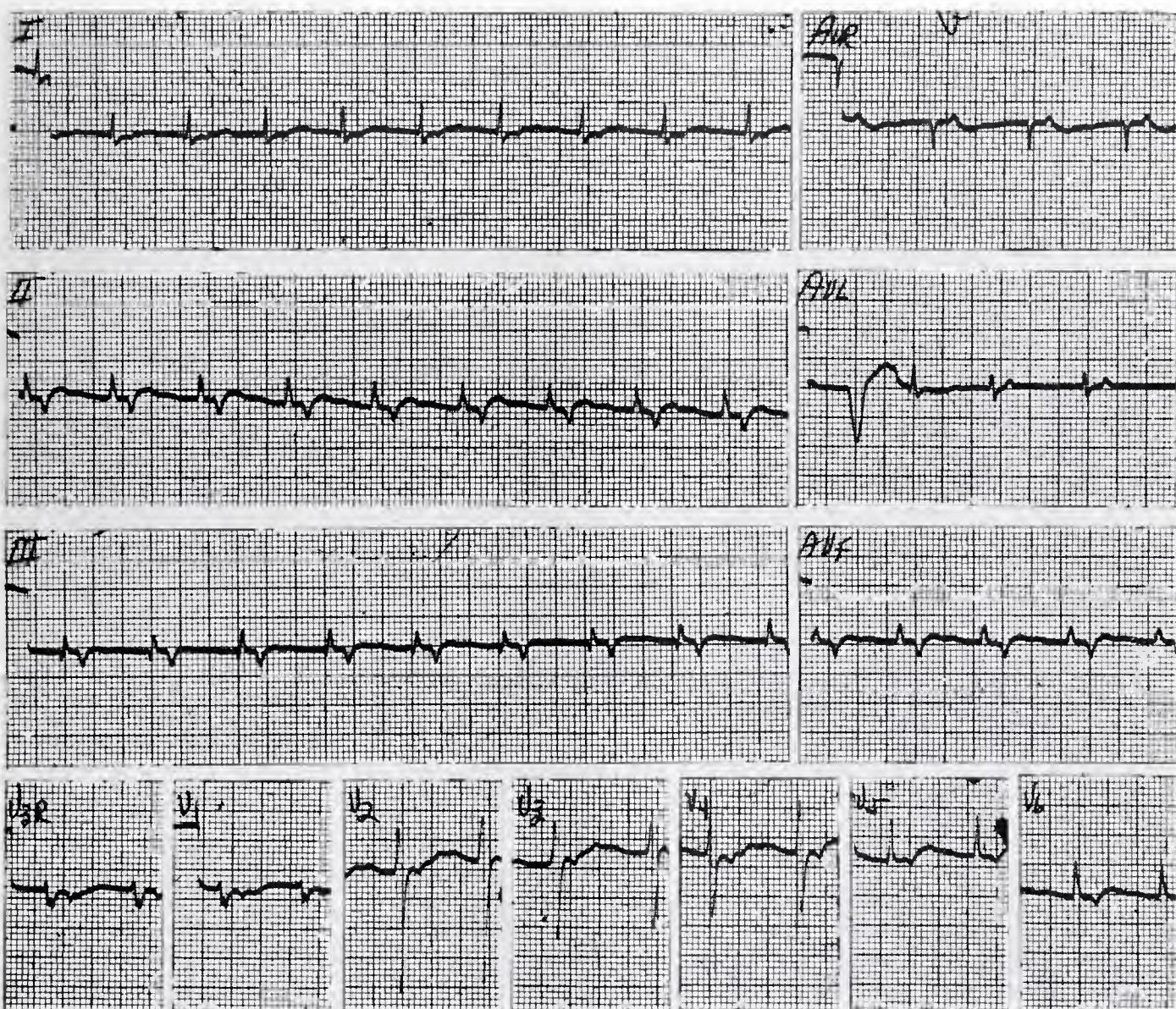
CARDIAC DIAGNOSIS: Undetermined

OTHER DIAGNOSES: Possible hyperinsulism

MEDICATION: None

HISTORY: 6 months history of malaise, weakness, fever

SEE ANSWER ON PAGE 303



The Department of Medicine, University of Arkansas Medical Center  
James S. Taylor, M.D., Professor of Medicine

## Rocky Mountain Spotted Fever

William L. Bunch, Jr., M.D.\*

**R**ocky Mountain Spotted Fever is caused by *Rickettsia rickettsii*. It is the prototype disease of the Tick-Bone Rickettsial Fevers commonly called the Spotted Fever Group which are characterized by sudden onset of fever that untreated ordinarily persists for two weeks, headache and injected conjunctivae, about the third day the maculopapular eruption (from which the name is derived) appears on the extremities and spreads rapidly to most of the body, even including the palms and soles before becoming petechial or purpural. Severe arthritic and muscular pains are commonly encountered. Synonyms are New World Spotted Fever, Tick-borne Typhus Fever, Mountain Fever, Typho-Malaria Fever, Bull Fever, Black Fever, Blue Disease and Spotted Fever. Fatality is about 20% in the absence of specific therapy. The broad spectrum antibiotics are the drug of choice.

Rickettsial diseases of the spotted fever group are clinically similar as they are caused by closely related rickettsiae and are transmitted by species of ixodid ticks. These diseases are widely distributed throughout the world, although each is limited to a different geographical area which helps in the differentiation of the rickettsial diseases, since the Weil-Felix reaction is of aid only in limiting the probable diagnosis to the rickettsial group, but is of no benefit in differentiating the spotted fevers from typhus. Acute and convalescent sera should be obtained with the full realization that the first is seldom diagnostic, yet is valuable chiefly as a reference point in recognizing the subsequent rise in titre usually present the second week of the disease, but remembering that occasionally the agglutinins for the Proteus strains OX-19 or OX-2 do not appear until early convalescence and that in some patients none are produced.

The complement-fixation test can be utilized by research laboratories to differentiate between spot-

ted fever, epidemic typhus, murine typhus, Q fever, scrub typhus and boutonneuse fever; this is not presently available from clinical laboratories.

People whose occupations cause them frequently to be exposed to the tick population may be immunized by vaccines containing killed *R. rickettsii* which reduces the chance of infection and also results in a lowered fatality.

Rocky Mountain Spotted Fever occurs throughout the entire continental United States, mostly during the spring and summer, but is most prevalent in the Rocky Mountain States and the Middle Atlantic Seaboard States. It is reported to occur also in western Canada, western and central Mexico, Columbia, and Brazil.

People of all ages are susceptible; however infection is more related to the individual's opportunities for contact with infected ticks. It is interesting to note that the preponderance of cases in the eastern United States is among children whereas in the western portion it is in adult males. Fatality reportedly increases with age of the patient.

Reservoir of the infection in nature is rabbits, field mice, weasels, marmots, chipmunks, cattle and dogs as well as the tick which remains infective for life, also a second generation of infected ticks may follow transovarian passage of the infective agent. It is well to caution people against smashing ticks in their hands, since the body fluid and feces may produce infection by contamination of the skin, although ordinarily transmission is by the bite of the infected tick.

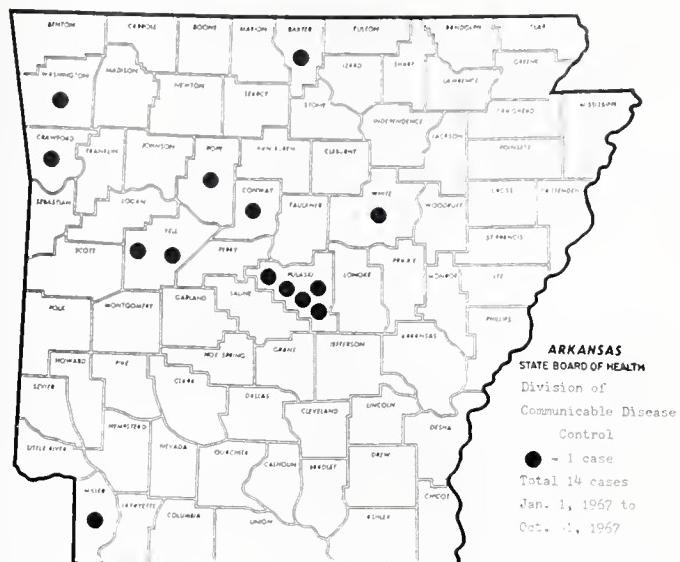
Incubation period is from 3 to 10 days.

Prevention depends on avoidance of tick-infested areas when feasible; otherwise remove ticks from the person promptly and carefully (to avoid crushing). Always protect hands when removing ticks from animals. Tick repellants may be useful.

\* Arkansas State Board of Health, Little Rock, Arkansas.

It must be pointed out that large scale measures to reduce tick populations are impractical, but the following may be valuable for individual ranchers or a community: clearing the land, reducing small wild mammal populations, stray dog control, and removal of ticks from livestock by dipping. In selected land areas, the direct application of DDT, chlordane, dieldrin, lindane, diazinon or benzene hydrochloride gives excellent control of some vectors.

The most important basic measure for control of communicable diseases is an informed populace, therefore education of the public regarding the mode of transmission of Rocky Mountain Spotted Fever by ticks and the means of personal protection is essential.



#### **Role of Human Growth Hormone in Response to Trauma: I. Metabolic Effects Following Burns**

H. S. Soroff et al (NE Medical Center Hosp., 171 Harrison Ave., Boston) *Ann Surg* 166:739-752 (Nov.) 1967

The metabolic effects of human growth hormone were studied in six patients who sustained moderate to severe burns averaging 30% of the body surface area. In general, increased storage of nitrogen, potassium, sodium, and chloride, and weight gain occurred with growth-hormone administration. There was, however, marked variability in the response in different patients and even in the same patient at various times post-burn. The administration of growth hormone was associated with an increase in oxygen utilization and a decrease in RQ although the degree of nitrogen storage and the increase in oxygen utilization bore no quantitative relationship. There was a sustained increase in serum non-esterified fatty acid levels with growth-hormone administration. The most striking nitrogen retention occurred early in the anabolic phase. Growth hormone did not exert any nitrogen-sparing effect during the height of the catabolic phase.

#### **Intensive Coronary Care: Arrhythmias After Acute Myocardial Infarction**

P. Mountsey (Hammersmith Hosp., London) *Amer J. Cardiol* 20:475-483 (Oct.) 1967

In a series of 103 consecutive patients with post-infarction arrhythmias, there was a mortality rate of 20% compared to the average morality of 30% in all patients with cardiac infarcts. Of reported cases 39 were complicated by supraventricular arrhythmia. In 12 of the 20 patients who died, arrhythmia was not considered the cause of death. Treatment included diuretics and digitalis for heart failure, postural treatment for maintenance of blood pressure, and oxygen for circulation improvement and prevention of arrhythmias. Pacemaker was used in six patients. In 7 of 18 patients with sinus bradycardia, vasovagal episodes developed in the first 48 hours. All patients recovered after postural treatment and intravenous atropine. Paroxysmal ventricular tachycardia occurred in 5% of the patients when it was part of a number of other arrhythmias leading to ventricular fibrillation; only one of these patients survived. Quinidine and propranolol were used, but propranolol depressed the myocardium and is not recommended for arrhythmias.



## EDITORIAL

# Malignant Carcinoid Syndrome

Alfred Kahn, Jr., M.D.

The therapy of malignant carcinoid syndrome has recently been reviewed by C. E. Mengel (Annals of Internal Medicine, Volume 62, page 587, March, 1965). The symptoms from carcinoid are, in addition to a tumor, the results of serotonin which is released by the carcinoid tumor and has wide-spread effects on the body. Mengel suggests that there are four major approaches to this problem: resection of the tumor, reduction of serotonin production, inhibit the peripheral effects of serotonin, and finally chemotherapy and/or surgery aimed at the primary tumor and any metastases. The objective criteria of success of therapy which was used was diminution in tumor size or alterations in the metabolic pathways involving serotonin (tryptophan metabolism).

Surgery for removal of a carcinoid carries more risk than usual; some patients are very sensitive to drugs used for anesthesia. The author points out the diversity of location of carcinoid tumors, although they tend to arise in the gastrointestinal tract and metastasize to the liver and lungs. Since metastases can produce serotonin, where possible they should be removed. "Carcinoid abdominal crises" occasionally occur and mimic the acute surgical abdomen.

Mengel states that whereas 1% of tryptophan usually goes into the production of serotonin, in malignant carcinoid 70% may follow this route. Restriction of dietary tryptophan is of some value in relieving symptoms temporarily. The man-

facture of serotonin can be diminished partially by cutting the intake of pyridoxine, which is chemically necessary in the conversion of five hydroxytreptophan to serotonin; this has not been very successfully accomplished by competitive inhibitors as desoxypyridoxine. Decarboxylation converts tryptophan to serotonin and enzymatic inhibitors of this decarboxylation as DOPA are usually not effective.

Mengel feels that serotonin antagonists have been a somewhat more successful means of treatment of malignant carcinoid syndrome. Three are discussed. They are Sansert, Periactin, and KB-95. These substances are chemically different and clinically unpredictable. Sansert is said to be the most effective.

Radiation as a treatment of carcinoid may be quite effective at times.

Anti-tumor drugs have been tried with some success. 5-Fluro-uracil is said to have produced side effects without much benefit. Cyclophosphamide seems to be potentially the best of the anti-tumor drugs; this opinion of Mengel's is based on both animal and human trials.

Mengel has made some general suggestions regarding the supportive care of carcinoid cases. He cautions to keep up the patient's nutrition; proteins should be limited to 70 g. per day. Excessive exertion may perpetuate flushing and should be avoided. Adequate hydration is important and often overlooked. Carcinoid heart disease should be treated symptomatically; and like any other similar disorder.

# Susceptibility of Group A Beta Hemolytic Streptococci to Antibiotics

Alfred Kahn, Jr., M.D.

Although the streptococci are frequently the cause of disease in human beings, the medical profession has felt that this bacteria was fairly easy to control with a wide selection of chemo-therapeutic agents and antibiotics. Erickhoff and Finland (American Journal of the Medical Sciences, Vol. 249, p. 261, March, 1965) have recently reviewed the effects of 18 antibiotic agents on group A Beta hemolytic streptococci.

They pointed out that sulfonamide resistance was originally noted in World War II; as a result serious epidemics occurred in military installations.

Of the antibiotics tested which included Penicillin G, Ampicillin, Nafcillin, Oxacillin, Cloxacillin, Methicillin, Cephalothin, Erythromycin, Oleandomycin, Bacitracin, Novobiocin, Chloramphenicol, Streptomycin, Tetracycline, Oxytetra-

cycline, Chlortetracycline, Demethylchlortetracycline, and Methacycline, Penicillin G was the most potent according to Erickhoff et al. They felt that the semi-synthetic penicillins were the next most active. Of great interest was the fact that 8% of the streptococci and strains from one hospital were not inhibited by large doses of tetracycline, and 25% from another city were not inhibited. Fortunately, the number of strains of streptococci resistant to the tetracycline drugs represent only a minority.

The authors recommend erythromycin as the drug of choice for patients who cannot take penicillin.

The medical profession should bear in mind that bacteria susceptibility to drugs may change and this points up the need for testing for antibiotic susceptibility.

## ANSWER—What's Your Diagnosis?

**DIAGNOSIS:**  
Malignant thymoma of the epidermoid type.

**X-RAY FINDINGS:**  
There is a mass seen widening both sides of the mediastinum. The mass obscures the right hilum. Contrast studies revealed complete obstruction of the superior vena cava.

At surgery the mass was found to involve the superior vena cava and adjacent structures and to extend into the right atrium. The tumor responded well to irradiation and the patient has done well for approximately two years.

## ANSWER—Electrocardiogram of the Month

**RATE:** Approx. 100    **RHYTHM:** A-V nodal  
**PR:** —Sec.    **QRS:** .07 Sec.    **QT:** .36 (?) Sec.

**SIGNIFICANT ABNORMALITIES:**  
Abnormal direction of P waves which follow QRS. Prominent U waves, partially superimposed on T. Non-specific T changes.

**INTERPRETATION:** Abnormal  
A-V nodal rhythm. Hypokalemia suggested.

**COMMENT:** Hypokalemia was documented.



## MEDICINE IN THE

### THE MONTH IN WASHINGTON

Washington, D.C.—A group of advisors to the Public Health Service and an AMA official separately emphasized the seriousness of the health manpower problem.

The Allied Health Professions Education Subcommittee of the National Advisory Health Council said in a report to the PHS surgeon general, Dr. William H. Stewart, that health manpower is the critical factor in the provision of health services in this nation.

"With the rising capacity of medicine to provide a satisfying array of services, the lowering of financial barriers to service, and the growing acceptance of a public responsibility to assure that all people have adequate medical service, needs and demands for medical care continue to outstrip their availability," the report said.

"Many people are struggling with approaches to the measurement of health manpower shortages. But no one figure can express the total need. And even if it were possible to envision ideal health services staffing for a community, a state, or a nation, the continuing development of new knowledge and techniques, new patterns of service, and new methods of payment are constantly changing the needs, both for numbers and varieties of health workers."

Dr. Alvin J. Ingram of Memphis, Tenn., a member of the AMA Board of Trustees, told the AMA Conference on Aging and Long-term Care in Baltimore, Md., that there is an urgent need for all categories of health personnel.

"We have been challenged by government to revamp our system of health care, to make it available to every one and to do so more economically than at present," Dr. Ingram said. "To do this will require not only larger numbers of health personnel, but more coordinated and efficient use of all members of the health team."

"The basic purpose of all of medicine—research, education and practice—is the application of the art and science of the profession to the individual

patient or to the community as a whole.

"Furthermore, we are constantly exposed to remarks about the brain drain, the siphoning of physicians trained in other countries and their acceptance here to fill our own voids, even at the expense of intensifying already desperate shortages in other nations.

"Yet we have our brain drain in this country—the consistent and progressive decrease in the ranks of practicing physicians as members of the profession turn from the primary responsibility of patient care to research, teaching and administrative service. In the past 15 years, the number of physicians in full time private practice has decreased at the rate of almost one per cent a year, from 75 per cent in 1950 to 62 per cent in 1965."

Dr. Ingram decried the growing dependence of the nation's health care system on foreign physicians.

"This dilemma can hardly be exaggerated," Dr. Ingram said. "Not one foreign graduate meets our domestic requirements which include graduation from an approved medical school which has undergone regular, competent inspection."

\* \* \* \* \*

Dr. Ingram cited government figures showing that the percentage of foreign physicians in the United States had risen from 16 per cent in 1956 to 26 per cent in 1966 and that nearly half of them were from under-developed or developing countries that badly need their services at home.

\* \* \* \* \*

The House Committee on Government Operations has issued its third report charging costly and inefficient administration of research grant programs by the National Institutes of Health and other Public Health Service bureaus.

The Congressional watchdog panel said the PHS had made relatively little effort to improve its administration of grants since the committee's two previous reports in 1961 and 1962.

"Inadequate administrative performance is demonstrated, for example, by the inept handling

of payments for the indirect research costs of grantees and the extremely poor administration of the General Research Support and Health Sciences Advancement Award programs," the recent report said.

"NIH and other PHS bureaus were found to have made excessive indirect cost payments to grantees." (About \$500,000 in one case.)

The American Medical Association supported legislation to continue federal aid for construction, training and research under the Health, Education and Welfare Department's retardation program, but opposes grants to help pay for initial staffing.

The AMA position was outlined by Dr. F. J. L. Blasingame, AMA executive vice president, in a letter to the House Public Health and Welfare Subcommittee. He said:

"The extent to which the problem of mental retardation can be ameliorated in future years depends largely upon continued research. Although some breakthroughs have been effected such as the prevention of some types of mental retardation as a result of our increased knowledge of body metabolism, there are still gaps in research, personnel and financing which must be overcome. While the ultimate answer to the problem of mental retardation is prevention, we recognize that in the meantime, mentally retarded individuals must be cared for and must be educated and trained to the limit of their capabilities."

"In this regard, the AMA supports efforts to provide higher standards of care for the institutionalized retarded, special educational programs, day care centers within the community, counseling services for the parents of retarded children, and efforts to create job opportunities for retarded adults. For these programs to be effective, the nation needs additional facilities and an increase in properly qualified personnel. We, therefore, are pleased to submit for the record our continued support of the expansion, extension and improvement of facilities and services through construction, training and research grants . . . .

"The bill, however, also amends the present Act to authorize grants for meeting a portion of the cost of compensating professional and technical personnel during the initial operation of the facility. Although such federal financial assistance during the early years might enable a mental retardation facility to undertake a more comprehensive program than it might otherwise attempt,

it can be demonstrated that once reliance is placed on a federal subsidy for staffing, the role of the federal government as a provider of operating funds will not easily be ended. Once a facility has been constructed, the community can and should assume the responsibility for its operation, including the costs of staffing."

\* \* \* \* \*

Pesticide residues in the nation's food supply have remained low for the third consecutive year, according to the Food and Drug Administration's third annual "total diet" study. In the survey, food samples were collected in 30 cities over an 11-month period ending last April. Samples were analyzed to identify and determine the level of pesticide residues. The FDA said residues remained well below acceptable daily intake levels established by the World Health Organization and the Food and Agricultural Organization of the United Nations.

\* \* \* \* \*

President Johnson appointed a National Advisory Commission to make recommendations on health facilities needed by the United States in the future. The chairman is Boisfeuillet Jones of Atlanta, Ga., president of the Emily and Ernest Woodruff Foundation and a former special assistant for health and medical affairs for the Department of Health, Education and Welfare.

\* \* \* \* \*

The recently-enacted Vocational Rehabilitation Act of 1967 creates a National Center for Deaf, Blind Youth and Adults, sets up a special system to grant federal aid, through state rehabilitation agencies for handicapped migrant workers, continues the federal-state financing system of state rehabilitation agencies for another two years, extends for another year federal planning grants to states studying the needs of the disabled, and eliminates state residency requirements for providing residency before aid can be received.

#### **APPLICATION ACTIVITY AND MCAT DATA OF APPLICANTS TO THE CLASS OF 1966-67**

A total of 18,250 persons applied for admission to the 1966-67 first-year class in U. S. medical schools. This is the second year in which there has been a decrease in the number of applicants following the high of 19,168 in 1964-65. Based upon the number of persons taking the Medical College Admission Test (MCAT) and U. S. population figures for the appropriate age group, it can be

anticipated that the number of medical school applicants to the 1967-68 class will remain approximately the same or will increase somewhat. The recent trend toward heightened application activity continued in 1966-67 with an average of 4.8 applications per applicant. The resulting total

of 87,627 applications represents a new high since 1950. One half of the total medical school applicants were accepted to the 1966-67 first-year class, including 348 persons who did not matriculate. The multistage selection process utilized by medical school admissions committees ensures the issu-

TABLE I  
SUMMARY OF APPLICATION ACTIVITY 1957-58 TO 1966-67

First-Year Class	Total Applicants	Applications Per Applicant	Total Applications	Accepted Applicants	New Entrants	First-Year Enrollment*	Per Cent of Total Applicants Accepted
1957-58	15,791	3.9	60,951	8,302	†	8,030	52.6
1958-59	15,170	3.9	59,102	8,366	†	8,128	55.1
1959-60	14,952	3.9	57,888	8,512	†	8,173	56.9
1960-61	14,397	3.8	54,662	8,560	†	8,298	59.5
1961-62	14,381	3.7	53,834	8,682	8,143	8,391	60.4
1962-63	15,847	3.7	59,054	8,595	8,394	8,642	56.5
1963-64	17,668	4.0	70,063	9,063	8,565	8,842	51.3
1964-65	19,168	4.4	84,571	9,043	8,587	8,836	47.2
1965-66	18,703	4.7	87,111	9,012	8,554	8,760	48.2
1966-67	18,250	4.8	87,627	9,123	8,775	8,991	50.0

\*Includes previously enrolled students. Enrollment for 1957-61 based on AAMC-AMA Liaison Questionnaire data. Enrollment for 1962-67 based on AAMC Applicant Study data.

†Data not available.

TABLE II  
MEAN MCAT SCORES OF ACCEPTED, REJECTED, AND TOTAL APPLICANTS,  
1961-62 THROUGH 1966-67

First-Year Class	Verbal Ability	Mean MCAT Scores			No. Taking MCAT	Percentage of Total Applicants	Total Applicants
		Quantitative Ability	General Information	Science			
Accepted Applicants							
1961-62	533	538	522	537	8,633	99.4	8,682
1962-63	514	537	541	545	8,920	99.6	8,959
1963-64*	537	552†	549	545	9,021	99.5	9,063
1964-65	540	567†	561	556	9,015	99.7	9,043
1965-66	511	583	565	549	8,983	99.7	9,012
1966-67	549	585	566	550	9,102	99.8	9,123
Rejected Applicants							
1961-62	469	465	469	458	5,340	93.7	5,699
1962-63	475	464	485	460	6,515	94.6	6,888
1963-64*	484	476†	501	467	8,247	95.8	8,065
1964-65	481	492†	509	473	9,802	96.8	10,125
1965-66	473	502	511	466	9,324	96.2	9,691
1966-67	488	510	516	478	8,788	96.3	9,127
Total Applicants							
1961-62	509	510	501	507	13,973	97.2	14,381
1962-63	515	506	517	509	15,135	97.4	15,847
1963-64*	511	516†	526	508	17,268	97.7	17,688
1964-65	509	528†	534	513	18,817	98.2	19,168
1965-66	507	542	538	507	18,307	97.9	18,703
1966-67	519	548	541	515	17,890	98.0	18,250

\*Figures include University of Tennessee applicants for all terms during 1963 plus those for the March, 1964 term.  
†Figure has been adjusted. See 1965-66 Study of Applicants.

ance of sufficient acceptances to fill available places. The first-year medical school enrollment of 8,991 students consisted of 8,775 new entrants and 216 students either repeating or completing the first year of medical school after a previous enrollment.

Table 1 presents a summary of application activity for each of the first-year medical school classes from 1957-58 to 1966-67. The number of first-year places in 1966-67 rose significantly for the first time in the past three years to a record high that provided slightly more places for new entrants this year than the total first-year enrollment of the preceding year. The average MCAT scores of the 98 per cent of all 1966-67 applicants who took the test are similar to the average scores obtained by applicants in previous years as shown in Table 2.

Since a number of factors serve to limit the selectivity of both medical schools and applicants, there is an overlap in the ability levels of accepted and rejected applicants as represented by the distribution of MCAT scores for each group. The mean MCAT scores of rejected applicants show improved performance over previous years, suggesting that an increasing number of these rejected applicants might have qualified for medical school if additional places had been available. This consideration, together with projected increases in the number of applicants in the immediate future, indicate the potential for significant expansion of medical school enrollment without compromising high admission standards for medical students.

## THINGS TO COME

### **Postgraduate Course in Pediatrics**

The Annual Postgraduate Course in Pediatrics will be held on March 8 and March 9, 1968, at the Scott and White Memorial Hospital, Temple, Texas. This will be a combined pediatric-radiology conference. The guest speakers will be Dr. John Caffey, Department of Radiology, Children's Hospital, Pittsburgh, Pennsylvania, and Dr. C. W. Daeschner, Professor and Chairman, Department of Pediatrics, University of Texas—Medical Branch, Galveston, Texas.



## OBITUARY

### **Dr. Jett O. Scott**

Dr. Jett O. Scott, 62, of Hot Springs died November 8, 1967. He was a prominent physician and a resident of Hot Springs for 30 years. He was retired and had been ill for some time. He was born in DeQueen in December of 1904. He was a graduate of Ashdown High School and the University of Arkansas Medical School. He was a flight surgeon during the second World War and attained the rank of lieutenant colonel. He was also a former member of the Civil Service Commission in Hot Springs. Survivors include his wife, a step-son, his mother, a brother, three half brothers, and an uncle.

### **Dr. Daphney Earl White**

Dr. Daphney Earl White died November 2, 1967 in an El Dorado hospital after a short illness at the age of 69. He was born in Monticello and was a physician and surgeon in Union County since 1921. He was a veteran of World War I and a member of the First Presbyterian Church of El Dorado, a member of the American College of Surgeons, a 32nd degree Mason and a Shriner. Survivors include his widow, one daughter, one brother, three sisters, and four grandchildren.



### **Influence of Extremes and Changes in Climate on Bronchial Asthma**

G. E. Burch and G. C. Miller (Dept. of Medicine, 1430 Tulane Ave., New Orleans) *Arch Intern Med* 120:389-396 (Oct.) 1967

The effects of extremes or changes in climate on patients predisposed to bronchial asthma were observed. In the patients studied, the most common predisposing disease was bacterial bronchitis. The subjects were studied in a specially constructed climate room resembling a hospital room, but with the capacity to vary the temperature and relative humidity precisely. Moderate extremes and changes in climate produced exacerbations and paroxysms of asthma.



## PERSONAL AND NEWS ITEMS



What you see pictured is the AMA exhibit for the Council on Rural Health. The men, from left to right, are Dr. Ben N. Saltzman, Mr. Austin Vines, Director of the Arkansas Agricultural Extension Service, Dr. Bond Bible, Secretary of the Council on Rural Health for the AMA, and Mr. Waldo Frazier, Executive Vice-President of the Arkansas Farm Bureau Federation.

### Arkansas Rural Health Conference Held in November

This year's Arkansas Rural Health Conference was held on November 8 and 9 at the Hotel Marion. The theme for the conference was "Meeting Medical Emergencies in Arkansas." Some of the topics discussed were: The Role of Accident Prevention in a Rural Environment, Highway Safety, Health Education in Schools, and Cardiopulmonary Resuscitation. Dr. Bond Bible, Secretary, Council on Rural Health, American Medical Association, attended the meeting and closed it with an address on Thursday morning.

### Dr. Saltzman Re-Elected to TB Board Post

Dr. Ben N. Saltzman of Mountain Home has been re-elected to serve as the Arkansas representa-

tive director to the board of the National Tuberculosis Association at a recent meeting of the state TB Association.

### Dr. and Mrs. Art Martin Special Guests at Dinner

Dr. and Mrs. Art Martin of Fort Smith were special guests at a dinner meeting of the Baxter County Medical Society. Mrs. Martin, president of the Woman's Auxiliary to the Arkansas Medical Society, spoke to the wives concerning the formation of a woman's auxiliary to the county medical society.

### Dr. Wilson Elected Chief of Medical Staff

Dr. Jack Wilson of Mountain Home has been elected chief of the medical staff at the Baxter

General Hospital. He succeeds Dr. W. R. Snow, also of Mountain Home.

#### **Doctor's Office Burglarized**

Dr. John E. Alexander's office in Magnolia was burglarized recently. Some papers and about \$10 in cash were taken from the safe.

#### **Dr. Mashburn Spoke at Meeting of Medical Technologists**

Dr. William R. Mashburn of Hot Springs spoke on "The Disease of Arthritis" at a meeting of the Hot Springs Society of Medical Technologists at Ouachita Memorial Hospital.

#### **Cave City Medical Center Held Open House**

The Cave City Medical Center conducted an Open House on November 12 honoring Dr. Troy Raney and his family.

#### **Mount Ida Gains New Doctor**

Dr. Ruben M. Harris opened an office in Mount Ida on November 9, 1967. He has been practicing medicine in Paragould, his home town.

#### **Lazenby-Blackwell Clinic Held Open House**

Dr. and Mrs. A. W. Lazenby and Dr. and Mrs. O. G. Blackwell held open house at their new Clinic in Dumas recently.

#### **Plans Made for New Medical Center In Harrison**

Plans have been made to build a \$333,800 medical center north of the Boone County Hospital in Harrison. There will be space for seven doctors' suites at present but the plans provide for future expansion of offices for ten additional doctors. Owners of the building will be Dr. Jean Gladden, Dr. Rhys Williams, Dr. William H. Breit, Dr. Joe Bennett, Dr. Robert Kent, and T. H. Jordan. Dr. Lex Moore and Dr. K. A. Siler will also have offices in the center.

#### **County Medical Society Holds Breakfast Meetings**

Phillips County Medical Society has completed a series of meetings, "Breakfast with Medicine", enabling physicians to receive post-graduate instruction without taking time away from their practices. Dr. William W. Biggs, president of the county Society, said that other programs of "Breakfast with Medicine" will be held in the near future.

#### **Osceola Doctor Working to Get More Doctors**

Dr. L. D. Massey of Osceola is working to encourage more young people to take up the study of medicine and return to practice in Osceola. The most recent project is that of mailing the *Osceola Times* to student doctors, thinking this will help make them homesick and thus return home to practice medicine.

#### **Dr. Applegate Elected to Office in Chamber of Commerce**

Dr. Stanley Applegate of Springdale was named as president-elect for the 1969 term of the Springdale Chamber of Commerce.

#### **Education Talks Held in Searcy**

Dr. Ben N. Saltzman of Mountain Home will make the first presentation in a series of continuing programs sponsored by the Searcy Chamber of Commerce. He will talk on "Home and Family Medicine".

#### **Dr. Wooley Returns to Pine Bluff After Year of Study**

Dr. Ralph Wooley recently returned home from Chapel Hill, North Carolina, where he studied Public Health at the University of North Carolina Medical School. He received a degree in Public Health Administration after his year there.

#### **Jonesboro Physician Makes Recording**

Dr. Hermie Gay Plunk of Jonesboro recently recorded two songs with a Nashville recording studio. The songs were entitled "When I'm Alone" and "Blue Is the Night". Dr. Plunk plays the guitar and sings.

#### **Diabetes Kits Made Available**

Diabetes kits were made available to residents in Polk, Sebastian, and Pulaski counties during the week of November 12-18. The kit enables anyone to take the diabetes test at home, then drop it in the mail and process is finished elsewhere. This was part of a drive to detect diabetes during Diabetes Week.

#### **Dr. Levy Attends Meeting in Los Angeles**

Dr. Jerome Levy of Little Rock presented two scientific papers at the meeting of the American College of Gastroenterology in Los Angeles the first weekend in November.

**Medical Brochure Wins Blue Ribbon**

A color medical brochure entitled "Fort Smith Cares for Its People" was produced recently by the Fort Smith Chamber of Commerce. The brochure promotes Fort Smith as a regional medical center and won first place in the literature awards competition of the Southern Industrial Development Council. The cost of the project was shared by the Sebastian County Medical Society, the Chamber of Commerce, St. Edwards Mercy Hospital, and Sparks Memorial Hospital.



**DR. H. C. PALMER, JR.** is a new member of White County Medical Society. He received his preliminary education from the University of Kansas. He graduated from the University of Kansas in 1963 and interned at the University of Kansas in Kansas City, Kansas. He served in the Medical Corps of the United States Army from 1964 to 1966. He is now practicing medicine in Searcy with an office at 1407 East Race. His specialty is Internal Medicine.

Another new member of the White County Medical Society is **DR. THOMAS O. WOOD, JR.** He received his preliminary education from the Centenary College of Louisiana and from the Arkansas State University. He graduated from the University of Arkansas School of Medicine in 1966 and served his internship at the Arkansas Baptist Medical Center. He also has served two years with the United States Army. He is now located at the Judsonia Clinic in Judsonia and is practicing general medicine.



## **PROCEEDINGS OF SOCIETIES**

**COUNCIL MINUTES**

The Council of the Arkansas Medical Society met at 7:30 p.m. on Saturday, October 14, at the Red Apple Inn, Heber Springs, Arkansas. Present were: Wood, Kemp, Norton, Chudy, Applegate, Duzan, Verser, Hyatt, Levy, Shuffield, Shorey, Bell, Easley, P. Kolb, Raney, Long, Whittaker, Mr. Paul Harris, Mr. A. M. Edwards and Mr. Paul Schaefer.

The Council transacted business as follows:

I. Chairman Townsend announced that the American Medical Association would hold a National Planning Conference for Health Care of the Poor in Chicago on December 15-16. Since this would conflict with the Arkansas Medical Society's Fall Officers' Conference, and to give the Council members time to think about it, it was decided to postpone action on the American Medical Association's request for representatives until the following day.

II. The Council approved the actions of the "Committee of the Whole" at the scheduled Council meeting of August 13.

III. The Council approved the following Executive Committee Actions:

(1) In accordance with Council direction that all fee committees be consolidated, the Executive Committee decided to dissolve all fee committees and designate the 21-Man Committee as the Fee Committee to negotiate all fee arrangements with third parties.

(2) The Executive Committee decided to appoint Dr. Whittaker as Chairman of a Committee for "Correlation of Government Plans". The committee is to be composed of:

(A) Appointees to government committees such as the Governor's Efficiency Committee, the Advisory Committee on Regional Health Programs, and the Advisory Committee on Comprehensive Health Planning, and other agencies;

(B) Dr. T. A. Feild of Fort Smith and Dr. Jerome

Levy of Little Rock;

(C) The Executive Committee of the Council of the Arkansas Medical Society.

IV. Upon the motion of Shuffield and Applegate, the Council voted to issue an invitation to the chairman of the Public Relations Committee to attend all future Council meetings.

The Council of the Arkansas Medical Society met at 11:45 p.m. on Sunday, October 15, 1967, at the Red Apple Inn, Heber Springs, Arkansas. Present were: Townsend, Wood, Applegate, Shuffield, Long, Thomas, Whittaker, Hyatt, Drewrey, Bost, Shorey, Charles Henry, P. Kolb, Sizemore, Easley, Bell, Gray, Johnston, Verser, Raney, Levy, Chudy, Duzan, Millar, Kemp, Norton, Mr. Eugene Warren, Mr. Paul Harris, Mr. A. M. Edwards, Mr. Paul Schaefer and Miss Leah Richmond.

The Council transacted business as follows:

I. Chairman Townsend called the Council's attention to the fact that Miss Leah Richmond will celebrate her 15th anniversary with the Arkansas Medical Society in November and suggested that Council appropriately recognize the anniversary. Miss Richmond's efficiency and devotion to duty were praised by many members of the Council. Upon motion of Applegate and seconded by Long, the Council voted to commend Miss Richmond and to authorize the purchase and presentation to her of a suitable gift.

II. Mr. Warren reported that the Governor's office acknowledged that an appointment to the State Cancer Commission was not in accordance with the law and that the appointment would be rescinded and the nominee of the Medical Society would be appointed in accordance with the statute.

III. Dr. Levy reported on the progress of the Committee on Medicine and Religion. He stated that he would attend a meeting in Kansas City as Chairman of the Committee on Medicine and Religion. Upon the motion of Wood and Applegate, the Council approved expenses for Dr. Levy.

IV. Dr. C. C. Long reported on actions of the Fee Committee, especially with regard to Blue Cross-Blue Shield proposals on the establishment of unusual and customary fees under the regular Blue Cross-Blue Shield Plan. A "Question and Answer" sheet on the subject, which Blue Cross-Blue Shield plans to send to all physicians, was approved by the Council.

V. President Norton reported:

(1) Continuing good relations with the Welfare program in handling the new program of usual and customary fees for physicians in payment of care for Welfare clients.

(2) He reported that his conference with the Vocational Rehabilitation Service had resulted in that organization's agreeing to pay physicians' usual and customary fees for physician services to Vocational Rehabilitation clients. Dr. Norton read a letter proposed by Vocational Rehabilitation and upon the motion of Thomas and Levy, the Council voted to approve the essence of the letter.

VI. Dr. Charles Henry reported on his attendance at a seminar on abortions held in Washington, D.C. After considerable discussion, and upon the motion of Thomas and Long, the Council voted that the Society should not take an official position on the subject of abortions. It was further voted to authorize the Chairman of the Legislative Committee to call on Society members to assist the Legislative Council in considering any proposed legislation on the subject, either as witnesses before the Legislative Council or otherwise.

VII. At this point, Dr. Townsend noted that Miss Richmond had arrived from the ladies' luncheon. He expressed the Council's appreciation and admiration of her work and dedication to her job, pointing out that the Council had voted a token of their appreciation but that the gift could only represent a small part of the admiration and respect of the members of the Medical Society. The Council gave Miss Richmond a standing ovation. Miss Richmond thanked the Council and expressed her interest and pleasure of association with the Society.

VIII. Dr. Joe Verser, Secretary of the State Medical Board, discussed the proposal by the Federation of State Medical Boards to make reciprocity for the Basic Science examination easier between the states. The Council voted to take no action on the proposal.

IX. Plans for an appropriate function in honor of Mrs. C. C. Long when she is installed as President of the Woman's Auxiliary to the American Medical Association in San Francisco in June, 1968, were discussed by Chairman Townsend and Mr. Schaefer. Upon the motion of Norton and Shuffield, the Council voted to authorize whatever funds were necessary to recognize the great honor earned by Mrs. Long.

X. Dr. Roger Bost, Program Director for the

Regional Medical Program (Heart, Cancer and Stroke), reported on the present status and aims of the program.

XI. Mr. Schaefer reported that Dr. Ben Saltzman had telephoned to advise that he was unable to reach Heber Springs on account of the weather but that the Advisory Board for the Comprehensive Health Planning Program would meet later in the month. Dr. Saltzman had, also, asked that the members of the Council be reminded of the Rural Health Conference to be held on November 8th and 9th.

XII. Dr. Easley reported that the State Health Department, the Heart Association and the Crippled Children's Division planned a program of education, screening and prophylaxis on Rheumatic Fever. He read a proposed memorandum to go to all physicians dealing with the prevention of Rheumatic Fever and offering the free services of the Health Department laboratory. After some discussion, and upon the motion of Millar and Bell, the Council voted to approve the memorandum.

XIII. Upon the nomination of Dr. H. W. Thomas, Dr. Wayne Lazenby of Dumas was elected Councilor of the Fourth District.

XIV. Mr. Schaefer discussed the present status of the disengagement of the Medical Society from its responsibilities as fiscal administrator of Military Medicare. He advised the Council that present plans called for the cessation of the processing of claims by the Medical Society on November 17; that Blue Cross-Blue Shield would be expected to begin the payment of claims under the program on December 1. Chairman Townsend reviewed recent communications with the Department of Defense on the program:

- (1) The Department of Defense advised the Medical Society that its contract would not be renewed.
- (2) The Council voted to request termination of the contract no later than the first of the year.
- (3) After preparations had been made for the transfer of the program to Blue Cross-Blue Shield, the Executive Director of Medicare told Medical Society Headquarters that the individual who had directed the termination of the contracts with state societies had been transferred and that there was a possibility that his office would not be required to terminate contracts with medical societies.

Upon the motion of Levy and Applegate, the

Council reiterated its desire to terminate its responsibility with regard to Military Medicare.

XV. The Chairman's attention was called to the fact that on the previous night the Council had postponed a decision on sending delegates to the American Medical Association conference on Planning for Health Care of the Poor. Upon the motion of Norton and Levy, the Chairman of the Council was directed to select representatives to attend the meeting.

XVI. Chairman Townsend discussed briefly the possibilities for public relations activities. He stated that the Council should be considering the employment of a man to assist the Executive Vice President to handle public relations. President Norton suggested that, in the meantime, the Councilors might be asked to release news items over their names, thus giving news releases local interest.

XVII. President Norton took the floor for discussion of several subjects.

- (1) He outlined changes in the ARKPAC constitution which, upon the motion of Norton and Shuffield, the Council voted to approve. The principal change directs that members of the Board of Trustees of ARKPAC be selected by the Council of the Arkansas Medical Society.
- (2) The Council voted to approve the spirit of Report "O" of the American Medical Association House of Delegates of June, 1967. By its approval, the Council expressed its desire that County Medical Societies include, in their annual dues billing to members, a bill for ARKPAC dues. The Council's vote was taken on the motion of Norton and Shuffield. Dr. Levy cast a dissenting vote.
- (3) Dr. Norton discussed the activities of Dr. Padberg as Chairman of the Committee on Liaison with the Nursing Profession, touching especially on clarification, through legislation, of the legal limits of nurse activities in patient care. The Council requested Mr. Warren to work with Dr. Padberg on the legal and legislative aspects of the problem.
- (4) Dr. Norton discussed the activities of the Governor's Efficiency Committee, which had been reported to him by the Medical Society representative, Dr. Thomas Jansen. Dr. Jansen had reported that the commission was without funds and was requesting a donation from each of the represented organizations. He suggested a donation of \$1,000 from the Medical Society.

It was noted that enough members of the Council had left the room that there was not a quorum present. It was suggested that the members of the Council be polled by mail to see if a donation should be made to the Efficiency Committee.

(5) Dr. Norton reported on Dr. Logue's diligent discharge of his responsibilities as Chairman of the Professional Relations Committee in attempting to settle the dispute between a member in Camden and a member in El Dorado.

Mr. Warren reiterated his opinion that the Society should proceed with handling the dispute in the manner outlined in the Rules of Procedure of the Professional Relations Committee.

(6) Dr. Norton suggested, and the Council voted, that all County Medical Societies be advised that the State Health Department is ready to carry out an immunization program. The County Medical Societies are to be asked to take the leadership in such programs.

The Council adjourned at 3:30 p.m.



## T U B E R C U L O S I S

## A B S T R A C T S

Sponsored by Arkansas Tuberculosis Association

### PNEUMONIAS CAUSED BY ESCHERICHIA COLI

*Pneumonia due to Escherichia coli, one of the common gram-negative bacilli in the intestinal tract, is described in twenty patients. The bacilli appeared to reach the lungs by way of the blood stream from sources in the kidneys and intestines, often following surgery.*

Since the increasing seriousness of infections due to gram-negative bacilli is generally recognized and since these are among the most difficult illnesses to treat, an effort has been made further to define these pneumonias and to determine how to recognize them early.

During a 30-month period, 82 episodes of gram-negative pneumonias were observed in 81 patients at the Detroit General Hospital. It became obvious that each gram-negative bacillus produces characteristic illnesses in particular groups especially prone to these infections. In the present report, 20 cases of *Escherichia coli* pneumonia are described.

One of the following procedures was the basis for the diagnosis of a pneumonia caused by a

gram-negative bacillus: isolation of the same predominant bacterium from two or more consecutive sputum cultures; isolation at approximately the same time of the same bacterium as a pure culture from blood and as the predominant organism from sputum, or isolation of appropriate bacteria from pleural fluid. A diagnosis of "mixed pneumonia" was made when pneumococci and gram-negative bacilli were isolated from sputum and blood.

#### METHODS OF IDENTIFICATION

Bacilli of the family enterobacteriaceae or the genera pseudomonas or bacteroides were identified by gram stain, colonial morphology, and sugar fermentations, as well as by their ability to decompose urea, produce hydrogen sulfide and indole, and to utilize citrate. Species were identified only for escherichia and proteus.

The 82 episodes represented 4.3 per cent of the pneumonias in the hospital during the period of the study. Of the total, 78 were primary, 64 being acquired outside the hospital, while 14 were nosocomial. Four other hospital-acquired secondary infections followed pneumococcal pneumonias. Secondary pneumonias were caused by

JAMES R. TILLOTSON, M.D., and A. MARTIN LERNER, M.D. *The New England Journal of Medicine*, July 20, 1967.

the klebsiella-enterobacter group, or the "colon bacillus." Five patients had mixed pneumonias with pneumococci and either klebsiella-enterobacter or *Proteus vulgaris*.

Among the gram-negative pneumonias the organisms seen were klebsiella-enterobacter, *Esch. coli*, pseudomonas, bacteroides, proteus, *H. influenzae*, and achromobacter. Overall mortality was 49 per cent, with deaths significantly more frequent with *Esch. coli* and pseudomonas.

"Colon-bacillus" pneumonias occurred in persons 17 to 84 years of age. One or more serious chronic diseases were present in every case. They involved the kidneys, heart, or lungs. Diabetes mellitus and pyelonephritis were among the most common.

Respiratory symptoms developed one to three days before hospitalization, with chills, feverishness, dyspnea, cough, thick sputum, and pleuritic chest pain. Only one patient had had a recent upper-respiratory tract infection. Gastrointestinal symptoms, noted in six patients, consisted of nausea, abdominal pain, dysphagia, diarrhea, or vomiting.

Signs of upper-respiratory tract involvement were found in five patients, but rales at the base of the lungs were uniformly heard. Signs of lobar consolidation were rare. Eight patients had empyema.

#### *ANEMIA RARE*

Only three patients were anemic at admission. The average initial white-cell count was 15,300. In one patient, a known alcoholic, the first recorded white-cell count was 23,000, which rose to 27,000.

*Esch. coli* organisms were recovered from sputum samples (18 of 20 patients), blood, urine, pleural fluid, or throat. All patients had gram-negative bacilli on smears of all sputum specimens and empyema fluids. Negative cultures were observed in patients already receiving antibiotics before specimens were obtained; in each of these cases cultures of blood were positive.

Roentgenographic examination revealed lower-lobe bronchopneumonias in 19 of the 20 patients. Pneumonic infiltrates gradually resolved in five to 20 days. In two fatal cases, pneumonia progressed. Three of the eight patients with large empyemas died.

Antibiotics were administered to all the

patients, most of them receiving several. The antimicrobials included penicillin, erythromycin, tetracycline, and chloramphenicol. Antibiotics with in vitro activity against the particular *Esch. coli* were the most satisfactory. Most of the strains were sensitive to kanamycin and colistin.

Adjunctive therapy included surgical procedures, blood transfusions, corticosteroids, and vasopressors.

Death generally occurred in patients with serious chronic underlying diseases. In those who survived, clinical amelioration was observed within the first week with appropriate antibiotics or drainage of empyema. Deaths during the first hospital week were usually due to infection, while those occurring later were more often due to complicating underlying disease.

*Esch. coli* pneumonias generally followed bacteremias seeded from acute or chronic infections of the gastrointestinal or genitourinary tract. Eight patients had pyelonephritis due to that organism. In two patients aspiration seemed likely as the cause.

The most abundant aerobic of the bacteria in the normal human intestine, these bacilli have been clearly associated with infections of the kidneys, gallbladder, peritoneum, appendix, and other occasional distant loci after bacteremias that may result from surgical procedures involving the gastrointestinal or genitourinary tracts. The "colon bacillus" is the most frequent cause of septicemias due to gram-negative organisms in hospitals.

#### *INCREASING INCIDENCE?*

The present series of pneumonias suggests either that there is an increasing incidence of pneumonias due to *Esch. coli* or that most of these infections had remained undiagnosed. These pneumonias occurred in men or women in their fifties and following bacteremias. The pneumonias were lower-lobe infiltrates, with frequent meta-pneumonic empyemas.

Patients in this series with pneumonias caused by *Esch. coli* who recovered had appropriate diagnoses and treatments, but patients with more serious underlying disease seemed more likely to die. On the basis of sensitivity studies in the laboratory, kanamycin was the drug of choice. Its administration, however, must be circumspect in these patients since pyelonephritis and at least subclinical diminished renal function are likely.

February, 1968

# THE JOURNAL OF THE Arkansas MEDICAL SOCIETY

Vol. 64 No. 9

FORT SMITH, ARKANSAS

92nd ANNUAL SESSION  
Arkansas Medical Society

ARLINGTON HOTEL, HOT SPRINGS, APRIL 21-24, 1968

Part of the fine art of medicine

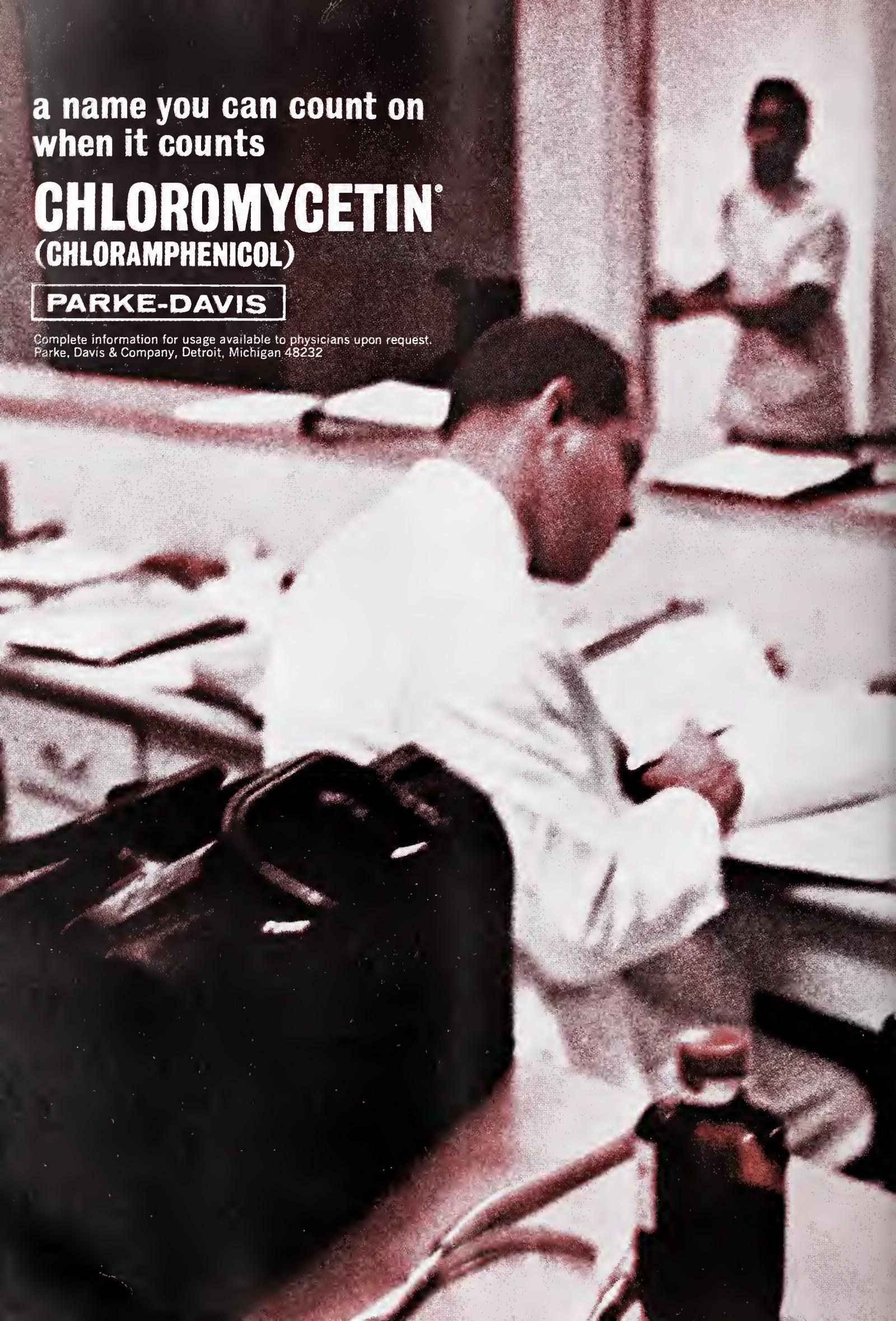
DARVON®  
COMPOUND-65

Each Pulvule® contains 65 mg. propoxyphene hydrochloride, 227 mg. aspirin, 162 mg. phenacetin, and 32.4 mg. caffeine.

Additional information available to the medical profession upon request.

ELI LILLY AND COMPANY  
INDIANAPOLIS, INDIANA 46206





a name you can count on  
when it counts

# CHLOROMYCETIN® (CHLORAMPHENICOL)

**PARKE-DAVIS**

Complete information for usage available to physicians upon request.  
Parke, Davis & Company, Detroit, Michigan 48232

# **BSP® DISPOSABLE UNIT**

**HW&D BRAND OF SODIUM SULFOBROMOPHTHALEIN INJECTION, USP**

(50 mg. per ml.)

**BSP®**

BSP, one of the more valuable single laboratory procedures for determining hepatic function, is now packaged in a complete individual patient-unit.

**BROMSULPHALEIN®  
IN A COMPLETE,  
STERILE,  
DISPOSABLE,  
& ECONOMICAL  
PATIENT-UNIT.**

Each BSP Disposable Unit contains a sterile syringe with the 5 mg./kg. BSP dosage schedule imprinted on the barrel, a sterile needle, alcohol swab and a 7.5 ml. or 10 ml. size ampule of terminally sterilized Bromsulphalein solution.

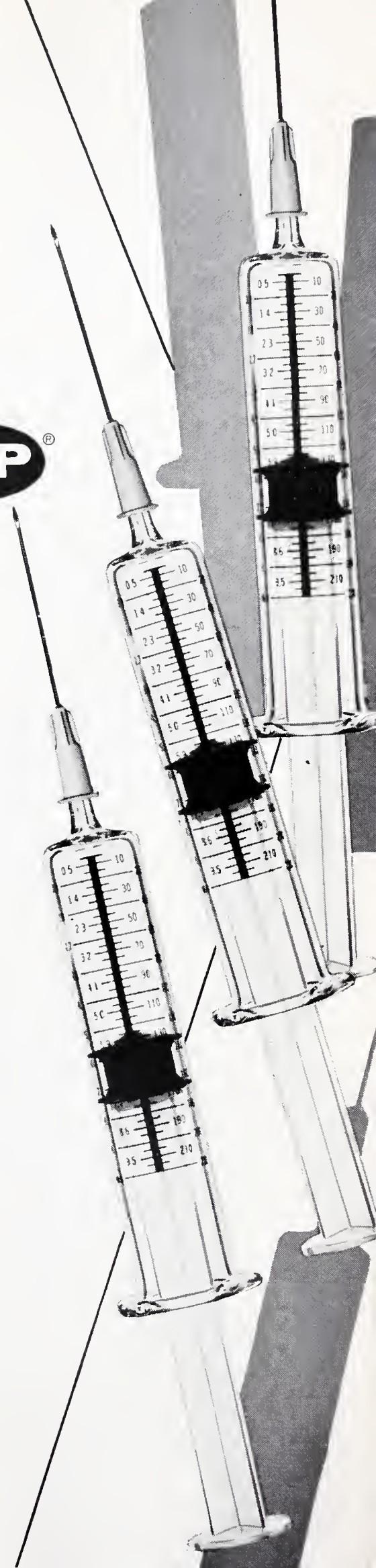
This all-inclusive disposable put-up lessens the chance of cross-infection and saves time and labor—the most costly commodities.

**HYNSON, WESTCOTT & DUNNING, INC.**



(BSP03)

BALTIMORE, MARYLAND 21201



**THE  
JOURNAL OF THE  
Arkansas  
MEDICAL SOCIETY**

Owned by

**THE ARKANSAS MEDICAL SOCIETY  
And Published Under Direction of the Council**

**ALFRED KAHN, JR., M.D., Editor**  
**1300 West Sixth Street Little Rock, Arkansas**

**MR. PAUL C. SCHAEFER, Business Manager**  
**218 Kelley Bldg. Fort Smith, Arkansas**

**LITTLE ROCK BUSINESS OFFICE**  
**114 E. Second St. Little Rock, Arkansas**

OFFICERS OF THE ARKANSAS MEDICAL SOCIETY  
 JOSEPH A. NORTON, President ..... Little Rock  
 H. W. THOMAS, President-Elect ..... Dermott  
 JEROME LEVY, First Vice President ..... Little Rock  
 DAVID H. PONTIUS, Second Vice President ..... West Memphis  
 GEORGE F. WYNNE, Third Vice President ..... Warren  
 ELVIN SHUFIELD, Secretary ..... Little Rock  
 W. R. BROOKSHER, Secretary Emeritus ..... Fort Smith  
 BEN N. SALTZMAN, Treasurer ..... Mountain Home  
 JOHN P. PRICE, Speaker, House of Delegates ..... Monticello  
 AMAIL CHUDY, Vice Speaker,  
     House of Delegates ..... North Little Rock  
 ALFRED KAHN, JR., Journal Editor ..... Little Rock  
 JAMES M. KOLB, SR., Delegate to AMA ..... Clarksville  
 JACK KENNEDY, Delegate to AMA ..... Arkadelphia  
 C. C. LONG, Alternate Delegate to AMA ..... Ozark  
 ALFRED KAHN, JR., Alternate Delegate to AMA ..... Little Rock  
 MR. PAUL C. SCHAEFER, Executive Vice President,  
     P.O. Box 1208 ..... Fort Smith

**COUNCILORS**

First District	ELDON FAIRLEY	Osceola
Second District	B. P. RANEY	Jonesboro
Third District	PAUL GRAY	Batesville
Fourth District	HUGH R. EDWARDS	Searcy
Fifth District	PAUL MILLAR	Stuttgart
Sixth District	L. J. P. BELL	Helena
Seventh District	T. E. TOWNSEND	Pine Bluff
Eighth District	ALBERT W. LAZENBY	Dumas
Ninth District	KENNETH R. DUZAN	El Dorado
Tenth District	PAUL SIZEMORE	Magnolia
	KARLTON H. KEMP	Texarkana
	JOHN P. WOOD	Mena
	JACK KENNEDY	Arkadelphia
	ROBERT F. McCRARY	Hot Springs
	WILLIAM PAYTON KOLB	Little Rock
	JAMES R. MORRISON	Little Rock
	STANLEY APPLEGATE	Springdale
	ROSS FOWLER	Harrison
	C. C. LONG	Ozark
	A. S. KOENIG	Fort Smith

The Advertising policy of this JOURNAL is governed by the PRINCIPLES OF ADVERTISING of the State Medical Journal Advertising Bureau, Inc. by the Advertising Committee of the Bureau and by the Council of the Arkansas Medical Society.  
 EXCLUSIVE PUBLICATION—Articles are accepted for publication on the condition that they are contributed solely to this JOURNAL.

COPYRIGHT 1968 — By the JOURNAL of the Arkansas Medical Society.

NEWS—Our readers are requested to send in items of news, also marked copies of newspapers containing matter of interest to the membership.

**SCIENTIFIC ARTICLES**

Population and Family Planning ..... 315  
*Sam P. Patterson, M.D.*

An Interpretation of Smooth Muscle Electrical Activity ..... 319  
*J. T. Saldivar, Jr. M.D. and C. E. Melton, Jr.*

Composition of the Soluble Proteins from the Nucleus & Cortex of the Crystalline Lens ..... 320  
*Virgil L. Koenig, Bryant F. Cobb, III and Lucy Carter*

Toward the Detection of Ovulation—  
 A Primary Report ..... 321  
*Donald J. Dierschke, William D. McMains and Richard J. Sinclair*

Age-Related Tissue Responses to Incubation with Pentobarbital ..... 321  
*A. Kurt Weiss, Robert J. Cossey and Robert W. Shaw*

Hereditary Self-Sealing Hiatus  
 Hernia In The Laboratory Rat ..... 322  
*Vernon S. Smith, Allan J. Stanley and L. G. Gumbreck*

The Good Samaritan In Arkansas ..... 323  
*Mr. Mike Wilson*

**FORUM FROM THE DEPT.  
OF OBGYN**

Vaginal Agenesis ..... 326  
*Joseph C. Johnson, Jr., M.D. and William L. Mason, B.S.*

**FEATURES**

What is Your Diagnosis?	333
Electrocardiogram	334
Arkansas Public Health	335
Resolutions	336
Editorial	337
Medicine in the News	339
Book Review	346
Tuberculosis Abstracts	347

## Population and Family Planning\*

Sam P. Patterson, M.D.\*\*

At the time of Christ there were approximately 250 million people in the world, and the crowd has grown progressively since. It took 1,600 years for the population to double to 500 million people. In another 250 years there were approximately 1 billion people. It subsequently took 80 years to double again, and in 1930 the world population was about 2 billion. In 1965 there were about 3 billion, and it is estimated that in year 2000 there will be 6 billion. So the world population is doubling approximately every 35 years at the present time. One may become apprehensive when he realizes that the population of the United States is increasing at a slower rate than that of other countries. Here our population is doubling in size every 50 years, and we are making efforts to decrease the birth rate all the time. In Red China there are approximately 750 million people, and in 1980 there will be a billion. In 1980 approximately one-fourth of the world will live in Red China. At the present time there are 800 million people in India. These figures one should compare with the present population of this country—about 190 million. The world population is increasing at the rate of 65 million per year or 180 thousand per day<sup>1</sup>; or, a city the size of Little Rock grows up nearly every day in the world. I think we, as physicians, are well aware of the reasons for the enlarging population: increased longevity as the result of better medical care, immunizations, cure of diseases, improved surgical techniques, and decreased infant death rates. To some the increasing world population is the most important problem in the world today. If the present trend continues, in 200 years there will be 150 billion people in the world, or 50 times as many as there are now.

The world population is a serious problem, but we are concerned as individual physicians and as counsellors to our patients and to their families

with the individual family explosion. The patients you and I are seeing have usually completed their families by the time they have reached age 25 or 30. We want to help these couples maintain a satisfying partnership, a durable relationship, for the remainder of their childbearing years without increasing the burden on the wage-earner of more mouths to feed without interfering with their sexual relationship. We also want to decrease the burden of illegitimate on the taxpayers. We would like to help young people delay childbearing until they are out of school and until they are able to care for their children. We would like to help them delay childbearing until a feasible time.

There are many methods of contraception that have been available to us through the years. The local methods of contraception such as diaphragms, jellies, and cervical caps are not efficient and are not popular now. We have better methods to control population problems and to prevent family explosion. For the world population problem the pills were thought to be the answer; but, now that the intrauterine contraceptive device has become available, this is probably more near the answer for world-wide population. It's probably the only method that will really significantly reduce the birth rate.

One might think the intrauterine device is something new, but this is not true. In the 1920's in Germany, Grafenberg used intrauterine rings made of silver and of gold.<sup>2,3</sup> They were effective as contraceptives, but became embedded in the uterine wall. They were also associated with bleeding and infection and fell into disrepute in the western world for about 30 years. In the 1950's new materials were available that did not cause tissue reaction, such as stainless steel and synthetic materials used for other prostheses. The intrauterine contraceptives made of these materials that became available in the 1950's were the reason for the Conference on Intrauterine Contra-

\*From the Department of Obstetrics and Gynecology, The University of Tennessee College of Medicine, 1967.

\*\*894 Madison Ave., Memphis, Tennessee.

ceptive Devices held in New York, April 30, 1962, under the auspices of the Population Council.<sup>4</sup> The Second Conference on Intrauterine Contraception was held in New York in October 1964. At that time intrauterine devices were being used throughout the world, with over 100,000 in use at that time in other countries.<sup>5</sup> In one program sponsored by the Population Council there were over 16,000 in use in this country at that time,<sup>6</sup> so the intrauterine devices are being used on a very large scale.

One might first ask the question, what are the advantages of intrauterine devices? They are very inexpensive and are simple to insert. There is no motivation or care required on the part of the wearer. Women simply say they want the device, it's inserted, and from then on they don't have to care whether they have it or not. Education is not necessary, and patients need not even be able to read a calendar. There is, in addition, subjective unawareness of the presence of the device, whereas with a condom or diaphragm there is awareness of their presence. Extremely important in population problems is the fact that it is unnecessary to constantly replenish contraceptive supplies —they may be used indefinitely. These are the primary advantages of the intrauterine devices. Not only as far as the population problem goes, these are advantages to individual patients.

The main disadvantage to IUD's is expulsion, which occurs in about 10% of cases (1.1% to 21.8% depending on the type device).<sup>7</sup> Cramping and bleeding will necessitate removal in another 5% to 10% so that there is overall effectiveness of about 80%.

Another disadvantage of the IUD is the remote possibility of pregnancy.<sup>6,8</sup> If pregnancy occurs, the device has usually been expelled without the woman being aware of it. If pregnancy occurs with the device in place, one leaves the device alone. Interruption of pregnancy may occur, although it does not always. The device is extraovular, between the chorionic membrane and the uterine wall and it usually passes with the membranes after delivery.

You may see reports of intrauterine devices being passed with abortuses and involved with the fetus. When this has occurred, it is thought the device has been introduced into the uterus to produce abortion.

Another disadvantage of intrauterine devices with a rigid tail extending from the cervix is dis-

comfort to the coital partner. This can be remedied by clipping the tail shorter. Most devices now have small nylon filaments extending from the cervix, and these are not noted by the male partner.

It has been said that leukorrhea may be increased. Most patients I see seem to have some leukorrhea, so I don't think this is satisfactory criticism of intrauterine devices. They could possibly become embedded in the myometrium, but this possibility is remote. If they are in the myometrium, they are there because they were put there at the time of insertion. Lastly, the uterus can be perforated. Early in our experience we have had them in the cul-de-sac, in the bladder, and in the broad ligament. One must be extremely careful to know exactly where the uterus is before insertion and be very careful that the introducer slips very gently into the uterine cavity. Medical students at the University of Tennessee insert these, and we have very few problems. Earlier, we probably were not instructing students carefully enough regarding position of the uterus, and there were more perforations. We have had none in the last year or so.

Possible criticism of the uterine devices could be an association with cancer, but this has not been reported. They do not cause endometritis,<sup>8</sup> and we do not think they promote pelvic inflammatory disease although they certainly don't prevent pelvic inflammatory disease. They can produce abortion and for this reason they are better inserted only during menses. For clinic patients this is not feasible; and, therefore, they are inserted at the six weeks' postpartum visit. We have inserted several hundred immediately postpartum on the delivery table and have had about 80% retention in these patients.

Among the few contraindications to intrauterine devices are large fibroids that would distort the endometrial cavity, active pelvic inflammatory disease, the presence of carcinoma or pregnancy. Menometrorrhagia will often times be aggravated. Since the devices tend to cause heavy or prolonged bleeding, I prefer to not use them in patients with heavy periods; the pills are better for these patients and will decrease bleeding. With uterine anomalies intrauterine devices probably should not be used. Lastly, non-parous patients ordinarily will not tolerate the devices. I have had several who have tolerated them nicely, but as a rule, those who are nonparous do not tolerate

them as well as those who have had children.

The method of function of the intrauterine devices has been debated and is not absolutely clear.<sup>9</sup> It has been suggested that they speed the transport of ova through the tubes by mechanical irritation. Since fertilized ova have been recovered from the tubes and from the uterus, they do not prevent fertilization. However, since conception has been defined by the American College of Obstetricians and Gynecologists to be implantation,<sup>10</sup> we can say that they do prevent conception. Perhaps the fertilized ovum gets to the endometrial cavity before the endometrium is receptive to the fertilized egg; and, therefore, implantation is prevented. Or, perhaps the endometrium is altered by a foreign body in such a manner that implantation does not occur.

The method of insertion of intrauterine devices is very simple. We do not insert them at the time of cervical biopsy or conization since pelvic infection has been reported following conization and cauterization. They are inserted during the menstrual period to be sure that the patient is not pregnant. Bimanual examination should be done to ascertain the position of the uterus. Then, with a tenaculum on the cervix and the bladder empty, the uterus is gently sounded. The device is then inserted. Patients must be told to not use vaginal tampons since the nylon filaments or the coil stem may catch on and be removed with the tampon. Patients are checked in one week to be sure the device is still in place and that the filaments are still visible. If the beaded device is used, it should be clipped so that only one or two beads are seen protruding from the cervix to avoid trauma to the sexual partner. Sterile disposable gloves are ordinarily used to handle the devices prior to insertion, but this may not be necessary. If the device is expelled, or bleeding or cramping necessitates removal, I ordinarily insert another type or size device.

When using a device with nylon filaments and when on return examination one does not see the filaments, there is a little pearl to pass along to you. We have used uterine dressing forceps or what-have-you to try to fish them out of the uterus. This may be very uncomfortable. Better, one may use a dry cotton tipped applicator. Introduce it into the uterus and twirl it around. The nylon filaments will catch on the cotton applicator and will come out of the cervix when the applicator is withdrawn. If the patient has not seen the de-

vice pass and one cannot find it, an abdominal x-ray will determine its presence as the devices are impregnated with barium.

The other method of contraception in widespread use at the present time is oral contraception. The pills, too, are not as new as one might think. The orally effective progestins were available in the early 1930's, but the one available at that time were very weak and were not as effective at inhibiting ovulation and altering FSH and LH production. Seventeen-alpha-ethynodiol testosterone was the product then available.\* It was not until the methyl group was removed from the 19 position that we had highly effective oral progestational agents. Most of the agents now marketed are 19-nor-testosterone derivatives, except for 17-alpha-hydroxy progesterone derivatives.\*\* These agents are all practically 100% effective in preventing pregnancy, although with sequential therapy several pregnancies have been reported.<sup>11</sup> Apparently the pills have some effect in altering pituitary output of gonadotrophic hormones so that ovulation does not occur. Estrogen alone will prevent ovulation, and we have used estrogen for endometriosis and for dysmenorrhea for many years to prevent ovulation. The problem with this was breakthrough bleeding and prolonged spotting on withdrawal.

Which pill is the most effective? Well, all of the pills are effective. Patients who tend to have acne or oily skin seem to do somewhat better with norethynodrel\*\*\* than with the other 19-nor derivatives. Perhaps the reason for this is the position of the double bond in ring A in the 5-10 position as in estrogens rather than in the 4-5 position. I will not review side effects in detail, but will mention only one. Patients taking oral contraceptives may miss periods, or not have withdrawal bleeding, for even 6 or 7 months. Some of these will resume periods if changed to sequential therapy.

Among contraindications to the pills are liver disease, since they alter liver function tests.<sup>12, 13</sup> They promote fluid retention so renal disease is a contraindication. Carcinoma of the genitalia is also a contraindication since it may be affected by hormones, and then varicose veins or a history of thrombophlebitis since these drugs have been incriminated with thrombophlebitis and pulmonary embolism,<sup>14</sup> although I think we have been

\* Marketed as Pranone, Progestoral, Prolution-C, and Lutocylol.

\*\* Provera (Provest) and Chlormadinone (C-Quens).

\*\*\* Enovid.

well reassured by the Federal Government that they are not causative in producing thrombophlebitis.<sup>15</sup>

There are other methods of contraception available besides pills and IUD's. We must advise methods that meet the needs of individual patients, according to their personal preferences, according to their religious beliefs, and according to their intellectual motivation. In addition, are we spacing pregnancies, delaying them for a period of time, or trying to avoid pregnancy altogether? The older local methods might be best for some newly married couples or for those who are not particularly desirous of pregnancy, but who really don't care. I think we should not use contraceptive pills for long years in those who have never had children because of the possibility of an unknown infertility problem. So, after age 30 and no pregnancies, I think couples should be encouraged to have children and should not use contraceptive measures. Those patients who have completed their families and who desire no pregnancies whatsoever, should be offered irreversible surgical sterilization. Sterilization of the male and female is legal in all 50 states, with restriction to reasons of medical necessity in only two, Connecticut and Utah.

Local ground rules have determined the criteria for sterilization in most communities. There are no cases on record of which I am aware of physicians having lost lawsuits where proper consent has been obtained and local ground rules have been followed. It is interesting that some of the insurance companies are beginning to pay for sterilization. In my community our rules at the present time are that any woman who is age 26 and having her fourth baby or age 32 and having her third baby may have a postpartum sterilization. This is done at the time of delivery with the same anesthetic. We also offer sterilization to those who are having their third cesarean section or who have had three episodes of pre-eclampsia. These indications have what we term "automatic approval" by the Sterilization Committee. We also perform interval sterilization using the same criteria and for this we usually use the vaginal approach.

Sterilization of men has not been popular in Memphis, although I think it will become popular. Some reports indicate that the results are not altogether gratifying,<sup>16</sup> but I cannot speak to you from experience with my patients.

Occasionally the question of family planning with legalized abortion arises. This is a possible answer to population control, but our courts at the present time do not allow this. There are those who say this would allow population control, prevent unwanted children, and decrease the illegitimacy rate. The question also is asked, is abortion safe? I think that it is probably as safe as vaginal delivery. If abortion is done in the proper hands, with proper techniques, and proper precautions, then ill consequences are rare.<sup>17</sup> It is when criminal abortions are done in dirty back offices that problems arise. But, there are serious disadvantages. It is rather distasteful to me to liberalize abortions too widely, although I think our abortion laws must be liberalized somewhat. I do not think future fertility is impaired, but for women to have repeated abortions as a method of contraception is distasteful to me—to think that my wife, or my sister, or my mother would have repeated abortions. I would think that women would lose their sense of value of motherhood. It might promote promiscuity, but certainly there couldn't be much more promiscuity than there is today with the availability of contraceptive pills. Perhaps legalized abortion on request would tend to break down the family unit, which is the basis of western culture. I am not a proponent of free love; and, I would not want my own wife, sister or mother, or my own daughters to have abortion on request. The family unit is the basis of western culture and complete legalization of abortion might lead to destruction of the family unit. I am in favor of liberalization of abortion laws as advocated by the Model Penal Code of the American Law Institutes: when there is danger to the mother's life or health, when the fetus is likely to be malformed, or when pregnancy has been the result of rape or incest. Jacobson recently has advocated therapeutic abortion for those patients who have a history of congenital genetically abnormal children.<sup>18</sup> Amniocentesis may be performed at about 15 weeks gestation and if culture of the cells removed reveals chromosomal abnormalities, the pregnancy could be removed and be replaced in a few months by a normal healthy pregnancy. I also would be an advocate of this.

We have reviewed family planning and population control. I am an advocate of intrauterine contraceptive devices and the pills for most patients who are wanting to space their children. If these are contraindicated, then other mechanical

methods of contraception should be used or even may be better for those patients who simply are mildly desirous of not becoming pregnant. Once the family has been established though, irreversible surgical sterilization should replace the intrauterine devices and powerful progestational agents.

## REFERENCES

1. Anderson, K. N.: Is "The Pill" the Answer? *Today's Health*, (June) 1965, p. 28-34, 70.
2. Gräfenberg, E.: Die Intrauterine Methode der Konzeptionsverhütung. Third Congress of the World League for Sexual Reform, p. 116-125, 1929.
3. Gräfenberg, E.: An Intrauterine Contraceptive Method. Seventh International Birth Control Conference, p. 33-47, 1930.
4. Tietze, C., and Lewit, S.: Intra-Uterine Contraceptive Devices, Proceedings of the Conference, International Congress Series No. 54, Excerpta Medica Foundation, New York, 1962.
5. Berelson, B.: Application of Intra Uterine Contraception in Family Planning Programs. *Intra-Uterine Contraception*, proceedings of the Second International Conference. International Congress Series No. 86, Excerpta Medica Foundation, New York, 1965, p. 9-13.
6. Tietze, C., and Lewit, S.: Intra-Uterine Contraception: Effectiveness and Acceptability. *Intra-Uterine Contraception*, proceedings of Second International Conference Series No. 86, Excerpta Medica Foundation, New York, 1965, p. 98-110.
7. Holden, R. T., et al.: The Control of Fertility, JAMA 194:230-238, 1965.
8. Brown, W. E., and Allen, E. S.: Studies on the Intrauterine Contraceptive Device, Southern Med. J. 59:589-92, 1966.
9. Segal, S. I., Southam, A. L., and Shafer, K. D.: *Intra-Uterine Contraception*, Proceedings of the Second International Congress Series No. 86, Excerpta Medica Foundation, New York, 1965.
10. Committee on Terminology: *Terms Used in Reference to the Fetus*. Terminology Bulletin Number 1, Chicago, American College of Obstetricians and Gynecologists, September 1965.
11. Goldzieher, J. W., et al: New Oral Contraceptive, Am. J. Obst. and Gynec. 90:404-411, 1964.
12. Larsson-Cohn, U.: Oral Contraception and Liver-Function Tests, Brit. Med. J. 1:1114-1115, (May 29) 1965.
13. Larsson-Cohn, U., and Stenram, U.: Jaundice During Treatment With Oral Contraceptive Agents, JAMA 193:422-426, 1965.
14. Reed, D. L., and Coon, W. W.: Thromboembolism in Patients Receiving Progestational Drugs, New Engl. J. Med. 269:622-24, 1963.
15. Wright, I. S., et al: FDA Report on Enovid, Special Report, Ad Hoc Advisory Committee for the Evaluation of a Possible Etiologic Relation with Thromboembolic Conditions, JAMA 185:776, 1963.
16. Ziegler, F. J., Rodgers, D. A., and Kriegsman, S. A.: Effect of Vasectomy on Psychological Functioning, Abstr., Psychosom. Med. 27:483-84, 1965.
17. Gebhard, P. H., et al.: *Pregnancy, Birth and Abortion*, New York: Harper & Bros., 1958.
18. Jacobson, C. B.: cited in A Way to Sidestep Mongoloid Birth?, Medical World News, Sept. 30, 1966, p. 32-33.



## ABSTRACT

## An Interpretation of Smooth Muscle Electrical Activity \*

J. T. Saldivar, Jr., M.D.\*\* and C. E. Melton, Jr.

Electrical activity of the ligamentum suspensorium ovarii of the white rat was studied in vitro and in vivo. Electrical activity in vitro is characterized by a continuous discharge of large action potentials. Frequency of discharge varied greatly, the range being 26-169 spikes per minute with a maximum measured spike amplitude of 5 mV. Conduction velocities of impulses were within the range generally accepted for action potentials in smooth muscle, 5-10 cm./sec., however in some preparations a latency difference between action potentials could not be demonstrated. Preliminary studies with micro-electrodes indicate the  $E_m$  of the cells in the ligamentum is not greater

than that of myometrial cells.

Electrical activity of the ligamentum in vivo is similar to that found in vitro except that occasional periods of electrical quiescence occur giving rise to an electrical discharge pattern similar to that of the myometrium. Recordings in vivo suggest that no correlation exists between electrical activity in the ligamentum and electrical and mechanical activity of the myometrium.

It is suggested that the large amplitude of the electrical discharges of ligamentum may be caused by an asymmetrical depolarization of smooth muscle cells. The voltages of the resultant dipoles might then sum in series in a manner similar to that known to occur in the electric organs of certain fishes.

\*Southwestern Section of the Society for Experimental Biology and Medicine.

\*\*3300 Cole Ave., Dallas, Texas.

# Composition of the Soluble Proteins from the Nucleus and Cortex of the Crystalline Lens

Virgil L. Koenig, Bryant F. Cobb, III, and Lucy Carter\*

Bovine, porcine, and rabbit eyes were collected from animals as soon after death as possible. The eyes were stored in the frozen state until needed. The intact lenses were carefully removed while the eyes were frozen. Extracts of the cortex and nucleus were made by progressively extracting the lenses at about 1.5° C. in the appropriate buffer. At this temperature, the cortex can be distinguished from the nucleus which becomes opaque at lowered temperature. The cortex is progressively extracted away. The opaque nucleus is removed, rinsed in the buffer, transferred to fresh buffer, and completely homogenized by grinding with sand. Whole lenses are similarly homogenized without separation of the cortex and nucleus. Moving boundary electrophoretic analyses were conducted on dialyzed extracts of the cortex, nucleus, and whole lenses in two buffers, phosphate, pH 7.7, Γ/2 0.2, and tris-veronal, pH 8.6, 0.05 M. Electrophoretic mobilities were calculated from the descending boundaries. Percentage distributions were obtained from arbitrary resolution of the ascending and descending patterns into a consistent number of components. Areas of each component were referred to total areas of the patterns in order to determine percentage distribution. With tris-veronal buffer, ten separate components appeared in the bovine and rabbit lenses. Seven components appeared in porcine lenses. The electrophoretic patterns of the cortex resembled very closely the patterns for the whole lens. This observation could be expected because the cortex makes up the larger part of the lens. In

both buffers, there was a diminished amount of the fast component in the nucleus compared to the cortex. In the rabbit, this reduction was more pronounced than in the case of the bovine and porcine. Tris-veronal afforded better resolution of the nuclear components than did the phosphate buffer. The fast component appearing in the cortex in a substantial amount was apparently  $\alpha$ -crystallin. While slower components occur in the cortex, they predominate in the nucleus. Slow components appear in the nucleus which are not apparent in the cortex. Quantitative data for mobility and percentage distribution are available for the three species using the two buffers.

Sedimentation studies were performed using the Spinco Model E ultracentrifuge at a speed of 59,780 rpm. Data for the bovine lens only are presented using 0.2M NaCl as solvent. Sedimentation coefficients were corrected to water as solvent at 20° C. At least four components appeared in the cortex giving a distribution of 18, 32, 5, and 45% with sedimentation coefficients of 22.47, 9.88, 5.71, and 2.78 S., respectively. The nucleus had five components with a distribution of 4, 4, 11, 14, and 67% with sedimentation coefficients of 18.19, 16.41, 12.76, 9.88, and 2.63 S., respectively. The distribution for the three components evident in the whole lens was 18, 38, and 44% with sedimentation coefficients of 19.68, 10.06, and 3.06 S., respectively. The whole lens represents a composite of those components occurring in the cortex and nucleus.

The distribution of the soluble proteins in the lens from bovine, porcine, and rabbit are different for the cortex and nucleus as identified by moving boundary electrophoresis and sedimentation.

\*Department of Biochemistry, The University of Texas Medical Branch, Galveston, Texas.



## ABSTRACT

# Toward the Detection of Ovulation – A Preliminary Report

Donald J. Dierschke, William D. McMains and Richard J. Sinclair\*

In order to ascertain the precise nature of endocrine control mechanisms in reproduction it is necessary to have a method for the exact timing of ovulation. It has previously been shown in women, cattle and sheep that characteristic arborization patterns form from cervical mucus and that the pattern varies with different phases of the estrous cycle. The varying pattern supposedly results from changing levels of electrolytes (secreted in response to estrogen stimulation) in the presence of cervical polymucosaccharides. Our interest is to study these changes over short periods of time by taking hourly cervical smears from ewes to determine if they have predictive value with respect to the time of ovulation. We intend to verify these observations by direct visualization of ovarian activity by peritoneoscopy.

In addition to the four arborization patterns previously reported (amorphous, rosette, arbor and fern), we have observed at various times during our hourly studies an additional pattern of the fern type which is sufficiently large to be seen with the unaided eye. We call this new pattern the "super fern". Assuming that this series of patterns reflects increasing blood estrogen titers, we have assigned them numerical scores for the purpose of graphical presentation. Four intensive

studies have been completed during which cervical smears were collected every hour beginning shortly after the onset of estrus and extending for approximately 35 hours. These data indicate much variation with no definite progression common to all four studies. The results are preliminary and much more data is necessary before the usefulness of the technique can be critically evaluated, however two tentative statements can be made:

- 1) There are very definite changes over short periods of time, indicating the probability that other changes are also occurring, e.g., blood estrogen titers.
- 2) There are trends in most cases toward peaks of activity. Hopefully these can eventually be correlated with known ovarian activity.

For the latter purpose, i.e., visualization of the ovaries by peritoneoscopy, cannulae have been surgically implanted into the abdominal walls of our experimental animals. Two different types of prostheses have been employed: one fabricated from clear Lucite and the other made from Silastic (Dow Corning). Our instrumentation includes the capability of recording visual observations by photography. We are currently working toward combining these two approaches to the detection of ovulation in the same animal.



## Age-related Tissue Responses to Incubation with Pentobarbital

A. Kurt Weiss, Robert J. Cassey and Robert W. Shaw\*

*In vitro* preparations of liver, brain cortex, kidney cortex and diaphragm from Holtzman rats at various ages ranging over a 2 year life span demonstrate a decline in the oxygen consumption rates with aging, the magnitude of the decline increasing in the order in which the tissues are

listed. The addition of  $1:0 \times 10^{-3}M$  Pentobarbital Sodium (Abbott) depresses the oxygen consumptions of all tissues studied. The extent of the depression becomes progressively less with age. The Pentobarbital-treated liver and kidney slices show a decline in the oxygen consumption rates with aging; the brain and diaphragm show no statisti-

\*Department of Physiology, University of Oklahoma Medical Center, Oklahoma City, Oklahoma 73104.

cally significant decrease. The administration of a larger dose of Pentobarbital Sodium ( $1.8 \times 10^{-3}M$ ) further depresses the oxygen consumption rates of liver and kidney slices, but the oxygen consumption levels attained by the brain and diaphragm are not significantly different from those reached with the lower dose of the

drug. This study demonstrates that Pentobarbital Sodium depresses the oxygen consumption rates of the tissues studied at all age levels, but that the percentage of the depression becomes less with increasing age. (Supported by grants from NIH).



## **Hereditary Self-Healing Hiatus Hernia (Gumbreck's Bouton) in the Laboratory Rat**

Vernon S. Smith, Allan J. Stanley and L. G. Gumbreck\*

A congenital anomaly of the diaphragm of rats, designated the self-sealing hiatus hernia (Gumbreck's Bouton) has been discovered in the rat colony of this Medical Center. A button of liver tissue extends by way of a pedicle from the caudate lobe of the liver through a small herniation of the diaphragm into the pleural cavity and becomes flattened in such a way as to seal the pleural cavity.

The incidence of the anomaly is 10% in the colony as a whole and when parents possessing the defect are selected and bred as a closed colony the incidence in the offspring increases to 50%. The

type of inheritance could fit either of two assumptions: 1, that of a two-factor pair of genes with incomplete dominance in each or 2, that of a single Mendelian dominant gene with incomplete penetrance.

Vitamin A deficiency has produced an experimental herniation similar to this anomaly but the young remained inviable (Wilson, J. E. and Barch, S., Proc. Soc. Exp. Biol. and Med. 72:637, 1949). Three distinct features characterize Gumbreck's bouton: 1, it is self-sealing as described above and thus does not lead to a respiratory defect; 2, the liver always protrudes into the pleural cavity instead of the stomach; 3, this defect is definitely hereditary.

\*The University of Oklahoma Medical Center, Oklahoma City, Oklahoma.

# The Good Samaritan in Arkansas

Mr. Mike Wilson\*

## THE GOOD SAMARITAN PROBLEM OUTLINE

- I. The Nature of the Problem
- II. The Legislative Answer to It
  - (a) Constitutionality
  - (b) Construction and Ambiguities
  - (c) Abandonment
  - (d) Territorial Aspect
  - (e) The Real Advantage
- III. The Physician's View
  - (a) Survey of Arkansas Physicians
  - (b) Florida Survey in Contrast
- IV. Summary

The Good Samaritan of today, the physician who renders treatment to a stranger at the scene of an accident, is much more reluctant and hesitant to do so, we are told, due to the fear of a malpractice action against him and his knowledge of ever-increasing jury verdicts. Such supposed reluctance on the part of physicians, based upon conceivable but highly improbable facts (or rumors), apparently has been aggravated to such an extent that the legislatures of twenty-eight states, including Arkansas, have enacted statutes which purport to exempt the Good Samaritan from civil liability as a result of emergency treatment. This discussion is intended to acquaint the reader with the difficulties within the Arkansas version of the statute, and to make known the views of our Arkansas medical practitioners on the problem in general.

Act 46 of 1963 (Ark. Stat. 72-624) was passed during the rash of similar enactments in other states in the late 1950s and early 1960s. It reads as follows:

*Acts or omissions of emergency care exempt from liability for civil damages.*—Any person licensed as a physician and surgeon under the laws of the State of Arkansas, or any other person, who in good faith renders emergency care or assistance without compensation at the place of an emergency or accident, shall not be liable for any civil damages for acts or omissions in good faith.

Since no cases have arisen as yet under our statute, discussion of it must be limited to some degree of speculation as to how the Act will be construed. At the outset, however, we are met with the problem of the constitutionality of the

statute. Article 2, Section 13 of the Arkansas Constitution provides:

*Redress of wrongs.*—Every person is entitled to a certain remedy in the laws for all injuries or wrongs he may receive in his person, property, or character; he ought to obtain justice freely, and without purchase, completely, and without denial, promptly and without delay, conformably to the laws.

Does the Arkansas Good Samaritan statute fall within the prohibition of the Constitutional provision? It certainly seems that on its face the statute denies a common-law remedy to the person who may be injured by the well-meaning, but negligent, physician. By way of analogy, part of the Arkansas host-guest statute (Ark. Stat. 75-915) has been held unconstitutional under Article 2, Section 13. *Emerson v. Buffington*, 228 Ark. 120, 306 S.W. 2d 326. It seems eminently possible that the Good Samaritan statute may fall within the prohibition also.

As to the operative terms of our statute, what does "good faith" mean? If it means "exercise of reasonable or ordinary care", then the statute will be a nullity, since this standard applied before the statute was enacted. AMI 1501. This construction of the term "good faith" has been made before, although there was perhaps a different policy behind the construction. See *Fidelity & Cas. Co. v. Robb*, 267 F. 2d 473. Nevertheless, a physician's negligence, or lack of it, should be a relevant consideration in determining his "good faith". At least it can be said with a reasonable degree of certainty that the statute will not protect one who is grossly negligent or reckless.

What is an emergency? Or an accident? If a patient breaks his arm in the doctor's examining room as the result of a fall, and the doctor negligently sets it, will he be held liable for his negligence? It certainly seems that he should, but the statute apparently covers this situation in its breadth, and could be easily construed to exempt the doctor from liability.

If a physician renders emergency treatment, must he refuse payment for his services to protect himself? Or does the term "without compensation" refer only to an immediate offer of payment at the scene of the accident. This example, and the others listed above, point out the need for more specificity and care in drafting the statute, if

\*Student of University of Arkansas School of Law.  
\*\*606 No. Garland, Fayetteville, Arkansas.

it is to be at all effective.

It is well settled that a physician-patient relationship attaches when the physician undertakes to act, and that thereafter the patient may not be "abandoned". See *Norton v. Hamilton*, 92 Ga. App. 727, 89 S.E. 2d 809 (1955). Will the Good Samaritan statute aid the doctor in this area of potential malpractice suits? The statute does not mention abandonment at all, but it seems that many problems could arise by the failure of a doctor who might happen to be on a sightseeing trip, to put the injured person into the hands of his own doctor, or accompany him to the hospital.

It should be noted here that the Arkansas version of the enactment would protect out-of-state physicians who might act in emergencies in Arkansas. However, some Good Samaritan statutes of other states are limited in their coverage to licensed physicians of *those states*, and the Arkansas practitioner traveling through those states would not be protected.

It is submitted that the greatest advantage inherent in the Good Samaritan legislation will lie in its tendency to discourage the *bringing* of law-suits—a procedural advantage in the marginal or questionable cases—but it is also felt that the existence of a Good Samaritan statute, with its constitutionality and vagueness problems, will not materially impede recovery against a doctor by a negligently injured plaintiff.

The crux of the Good Samaritan problem lies in the individual physician's attitude toward it. To find out what Arkansas doctors think about the problem, an opinion survey was taken. One hundred practitioners, selected at random from all over the state, were polled, and thirty-four replies were received. The results of the survey are set out after the questions asked.

#### **STATISTICAL INFORMATION**

Age: 25-35 (6) 35-45 (10) 45-55 (12) 55-65 (4) over 65 (2)

Specialty: 17 GPs, 17 various other specialties

Gross Income: 0-\$10 (3) \$10-20 (6) \$20-40 (11) \$40-60 (10) over \$60 (4)

Area of Practice: Rural (11) Suburban (4) Urban (19)

Malpractice Insurance: 32 yes, 2 no Limits: 100/300, mostly

#### **OPINIONS**

Assume that you are on your way home from your office and come upon the scene of an auto-

mobile accident, where persons are obviously injured and require medical treatment.

1. Will you stop and render emergency treatment? 28 yes, 1 no; other: "probably not", "if injury critical", "only if I know them", "if no obvious help is present".
2. Is your decision whether to stop influenced by the following factors: (a) the knowledge that your treatment, once undertaken, must be given with "reasonable care"? 25 yes, 9 no.  
(b) the existence or non-existence of malpractice insurance? 15 yes, 19 no.  
(c) the existence of a Good Samaritan statute? 17 yes, 17 no.  
(d) the knowledge that once a physician-patient relationship has arisen, the patient may not be abandoned? 17 yes, 17 no.
3. In such an emergency as that assumed, do you consider that a physician-patient relationship has arisen? 5 yes, 20 no, 9 "temporarily".
4. Do you know whether Arkansas has enacted a Good Samaritan statute? 11 yes, 23 no.
5. Which do you fear most: (a) the mere bringing of a malpractice suit against you, or (b) the recovery of a large judgment against you? 16 (a), 10 (b), 8 other "neither", "both", etc.
6. Should a doctor be held liable for voluntary, emergency, gratuitous treatment, *negligently given*, which results in harm to the patient? 19 yes, 7 no, 8 other "uncertain", "no more than a lawyer or other civilian", etc.
7. Do you know of any specific situations in which the Good Samaritan doctor was sued? 3 yes, 25 no, 6 other "have read of it", "not first hand", etc.

The writer was pleasantly surprised at the physicians' answers to question No. 1—the doctors of our state seem to have higher humanitarian instincts than those of other states. Or perhaps the answers were influenced by the fact that 32 out of 34 carry malpractice insurance. Whatever the reasons for this result, it hardly seems necessary for the residents of this state to fear for the lack of medical aid in an emergency. It is also interesting to note that the answers given to question No. 6 indicate that doctors do not tolerate negligent practice among themselves—at least in response to a survey.

In contrast to Arkansas' physicians' opinions, we have the results of a similar Florida survey. See 17 U. Fla. L. Rev. 586. A Good Samaritan statute was proposed, but not enacted, in that

state. In response to a question similar in substance to question No. 1, over one third answered *no*—that they would not stop to render aid. When asked if a physician should be responsible for *negligent* emergency treatment, 81% answered *no*. Other polls have shown that up to half of all physicians do not stop at accidents. *Newsweek*, Sept. 4, 1961, p. 41. This last survey was taken at a time when the Good Samaritan furor was at its height, and possibly the answers were more emotional than considered. It is comforting to note, however, that in both the Arkansas and Florida surveys there was a strong undercurrent of desire to

render aid, no matter what the individual answer happened to be.

In summary, it is apparent that although the problem still exists in other states, the dilemma of the Good Samaritan physician in Arkansas is more imagined than actual. The availability of malpractice insurance has contributed to this result, undoubtedly to a great extent, and the enactment of the Good Samaritan statute has probably played a lesser, minor role. But the overwhelming factor seems to be the good conscience of the individual physician, of whom we have many.



### Oxygen Therapy in Respiratory Failure

J. C. Mithoefer, M. S. Karetzky, and G. D. Mead  
(MIB Hosp., Cooperstown, N. Y.) *New Eng J Med* 277:947-949 (Nov. 2) 1967

Oxygen in concentrations of 24%, 28%, and 35% was administered by Venturi mask to eight normal subjects, seven patients with compensated respiratory acidosis, and to hospitalized patients in respiratory failure. The effects on arterial  $Po_2$ ,  $Pco_2$ , and pH were measured. In patients with pulmonary disease, there was wide variation in the effect of a given inspired oxygen concentration on arterial  $Po_2$ , ranging from dangerously low values to those which were unnecessarily high. This unpredictability of response demonstrates the known complexity of factors which govern arterial oxygenation at any inspired concentration. The effect of these concentrations of oxygen on arterial  $Pco_2$  was variable in patients with compensated respiration acidosis. The results dictate the necessity for frequent measurements of arterial  $Po_2$ ,  $Pco_2$ , and pH when oxygen is administered by Venturi mask in patients with pulmonary insufficiency.

### Unresolved Problems in Coronary Care

B. Lown et al (Peter Bent Brigham Hosp., Boston)  
*Amer J. Cardiol* 20:494-508 (Oct.) 1967

In a series of 300 hospitalized patients, death from myocardial infarction was usually due to overwhelming myocardial injury resulting in shock or pulmonary edema. Patients who did not respond immediately to catecholamines, digitalis, and other routine measures carried a poor prognosis. Conventional methods did not significantly alter mortality in this group. Definitive treatment of intractable pump failure needs new technics such as circulatory assist devices. Since sudden death prior to hospitalization, possibly due to arrhythmia, is the most common outcome in patients with coronary occlusion, the establishment of coronary care units closer in time to the onset of infarction may save more lives. The concept of "precoronary care" includes immediate hospitalization on mere suspicion of myocardial infarction, early electrocardiographic monitoring in emergency wards and in ambulances, and continuous telemetric monitoring of high-risk patients at their daily tasks. Improved methods are needed for diagnosing myocardial infarction.



STUDIES FROM  
THE UNIVERSITY OF ARKANSAS MEDICAL CENTER  
THE DEPARTMENT OF

# OBSTETRICS AND GYNECOLOGY

WILLIS E. BROWN, M.D., Professor, and Chairman  
STACY R. STEPHENS, M.D., EDITOR

## Vaginal Agenesis

Joseph C. Johnson, Jr., M.D., William L. Mason, B.S.\*

Absence of the vagina may result from aplasia of the mullerian duct system, or from abnormal sex chromatin and chromosomal patterns. Its congenital absence is a rare anomaly;<sup>1</sup> the incidence varying from one per four thousand female patients<sup>4</sup> to six per five hundred thousand female admissions.<sup>3</sup> Meijer<sup>5</sup> quotes the 1895 Neugebauer report of one thousand patients with vaginal agenesis. Most authors agree that the first reported case was described by Realdo Columbus in 1752.<sup>5</sup>

Although generally not considered as true aplasia, those conditions in which children are born with mixed genital equipment often present themselves for vaginal constructive surgery. The majority of these patients have a true male sex chromatin pattern, but many female characteristics in their development. Experimental data has shown that development will not occur along masculine pathways unless there is a strong male hormonal stimulus acting at the precise point in embryonic life when structures are beginning to differentiate into the male genital apparatus.<sup>6</sup> When this stimulus is missing or imperfect, there is a strong tendency for the infant to develop as a female regardless of the sex chromatin pattern. The resulting defect is often enough to have the child raised as a girl, but the mullerian duct derivatives are rudimentary or absent.

Both genetic and environmental factors may contribute to failure of development of the mullerian duct system in the otherwise normal female.<sup>7</sup> At eight millimeters the mullerian ducts appear as an evagination of the celomic cavity lateral to the upper portion of the wolffian ducts. The caudal portions of the mullerian ducts form

solid tips which grow through the mesenchyme and cross the wolffian ducts anteriorly at the caudal end of the mesonephros.<sup>9</sup> When the embryo is 30 millimeters in length, the mullerian ducts fuse and reach the posterior wall of the urogenital sinus, pushing it forward to form the mullerian tubercle. The insertion of the ligamenta inguinale into the urogenital cord divides the mullerian ducts into two parts; one superior which remains separated and forms the tubes; and a second fused portion, the uterovaginal canal.<sup>10</sup> At 56 centimeters the wolffian duct system begins to undergo atrophy and there is a great intermingling of cells of the urogenital sinus, wolffian ducts, and mullerian ducts.<sup>9</sup> For this reason, controversy exists as to which group of cells proliferates to predominate in formation of the vagina. St. Loup<sup>10</sup> observed that the epithelium covering the upper one-half of the genital canal became columnar in nature while that of the lower one-half became squamous. He further observed that in the 5th month the uterovaginal canal became longer and flattened from front to back in its vaginal portion, the opposite epithelial walls fusing from below upward forming the epithelial lamina. Bryan, et al,<sup>9</sup> observed this same sequence of events in the embryo of 63 millimeters.

At this point in development the urogenital sinus grows, forms a prominence over the urogenital membrane, and becomes the genital tubercle. From a tract in its inferior portion is derived all the vestibular structures from the anterior aspect of the urethra to the clitoris. The vaginal plate, or epithelial lamina, now proliferates actively, invades the surrounding mesenchyme, causes a widening of the channel transversely, and enlarges in the longitudinal direction. The increase in the

\*From the Department of Obstetrics and Gynecology, University of Arkansas Medical Center.

upper end at the point where the epithelial covering changes from squamous to columnar represents the future intercervix and vaginal fornix. From the inferior end of the urogenital tract another active cellular proliferation begins. This joins the vaginal plate and contributes to its widening. After cellular proliferation along the axial center of the lamina, there follows a phase of involution and loss of cells ending in the formation of the vaginal canal which extends from the hymen to the cervical canal. Vaginal atresia may be caused by a total or partial absence of this involutional process.<sup>1, 8, 9, 10, 11</sup> Meijer<sup>5</sup> and Miller<sup>7</sup> feel that failure of fusion of the midportion of the mullerian system causes aplasia of the vagina.

Despite the foregoing discussion, there is by no means unanimous agreement as to the precise origin of the vagina. Bacsick<sup>12</sup> felt that the entire vagina is derived from the entodermal urogenital sinus. On this basis he described what he considered a second separate entity, that of congenital absence of the vagina in the neonate. In these newborn infants the anomaly was strictly confined to derivatives of the urogenital sinus, while in most adult patients, organs of mesodermal (mullerian) origin were also involved.

#### CORRECTIVE PROCEDURES

In any review of congenital absence of the vagina, consideration must be given to the numerous operative procedures that have been utilized at one time or another in correcting the defect. Generally speaking these methods may be divided into four types: simple reconstruction, simple pressure, intestinal transplants, and free skin grafts. To this breakdown of techniques proposed by McEwen<sup>13</sup> must also be added the techniques of Graves,<sup>14</sup> Davis and Cron,<sup>15</sup> and Falls<sup>16</sup> who utilized skin derived from the labia minora; and Frank and Geist,<sup>17</sup> and Grad,<sup>18</sup> Dannreuther,<sup>19</sup> and Flynn and Duckett<sup>20</sup> who utilized full thickness grafts derived from the thigh to line the dissected space between bladder and rectum.

Steinmetz,<sup>21</sup> who presents an excellent historical review of the various surgical techniques, credits Dupuytren in 1817 with the first known attempt at surgical creation of an artificial vagina. He merely created an opening between bladder and rectum but this was not satisfactorily maintained. Abbe, a short time later, used a unilateral

flap of skin of labia minora to line the tunnel and again poor results were obtained.<sup>5</sup> In 1898 came the first attempt at construction with a split-thickness skin graft.<sup>5</sup> In 1904 Baldwin<sup>22</sup> first suggested the use of intestinal transplants in construction of an artificial vagina. He used this technique for the first time in 1907. In his technique a piece of ileum was mobilized and sutured to the hymenal ring by an abdomino-perineal approach. Technically and functionally the procedure had many disadvantages. The operative mortality was between 20 and 30 per cent.<sup>13</sup> Intense leukorrhea persisted from the mucous glands of the isolated loop to make the procedure anesthetically unsatisfactory. Schubert in 1911<sup>23</sup> transected the rectum above the sphincter and moved it forward to lie in the newly created space beneath the bladder. The sigmoid was then brought down to re-establish bowel continuity. Zangi<sup>24</sup> utilized the sigmoid flexure in a similar technique. He reported fourteen cases with excellent results and cited the proximity of the mesosigmoid and its blood supply as an advantage of his technique.

In 1911 Mackenrodt lined the tunnel between bladder and rectum with transplanted vaginal epithelium from a donor with unsatisfactory results.<sup>25</sup> In 1930 Kerschner and Wagner combined gynecology and plastic surgery to evolve a simplified split-thickness graft procedure which was satisfactory as long as postoperative dilatation of the canal was maintained. Success of the free skin graft technique was inconsistent until 1938 when McIndoe and Bannister reported their series.<sup>26</sup> McIndoe cited his principals of inlay grafting as follows: careful preparation of the cavity with complete asepsis and hemostasis, the use of a thin split-thickness graft in one piece, and continuous dilatation until the contractile phase is over. Stabler<sup>28</sup> has modified McIndoe's procedure somewhat by creating the vaginal space and inserting the mold without a graft, then returning the patient to the operating room 3 days later to remove the mold, place the graft around it and re-insert the mold. He believes better hemostasis is obtained with this technique and that time is allowed for shrinkage of the space around the mold. In 1959 McIndoe<sup>36</sup> reviewed his cases performed over the preceding 22 years. Utilizing the inlay grafting technique he performed one hundred and five procedures reporting excellent results in 89 per cent and poor results in only 5 per cent of

cases. This high success rate and low morbidity have prompted most surgeons to adopt his technique in a majority of patients.<sup>7, 8, 9, 11, 34, 35, 37</sup>

Wharton<sup>27</sup> in 1938 reported his method of constructing an artificial vagina based on the principal of proliferation of the vaginal epithelium. Also in 1938, Frank<sup>28</sup> reported that intermittent pressure could rapidly form a vagina, and this was successful in five of six patients. In 1940 he reported a total of nine cases and recommended that this method should entirely replace operation.<sup>29</sup> Sargis<sup>30</sup> advocated a two stage approach. In the first stage, laparotomy was done at which time the degree of development of the mullerian duct system was evaluated. The urinary bladder was then mobilized anteriorly over the surgically united mullerian remnants giving adequate room for formation of a vaginal cone and creating a fixation point for support of the future vagina. Six weeks later a vagina was created by the McIndoe technique. He reported four cases with excellent results. Williams<sup>13</sup> cited a simple operation in which an epithelial-lined tube was formed from the skin of the labia majora and fourchette. No dissection between the rectum and bladder was done. He reported excellent results in one patient with vaginal stenosis and in two with congenital absence of the vagina. He noted satisfactory coitus productive of orgasm in two married patients.

#### MATERIAL

This report is a study of fifteen patients with vaginal agenesis who have been seen at the University of Arkansas Medical Center during the past 25 years. Their average age was 23 years with a range of 3 to 39 years. Three patients were Negro.

Nine patients presented a primary chief complaint of amenorrhea. In four others this was a secondary complaint. Three patients had experienced cyclic lower abdominal pain and one complained of vicarious menstruation through the nose. Three of the four married patients presented chief complaints of unsatisfactory coitus while three patients were referred for evaluation of abnormal sex organs.

Eight patients exhibited normal external female development, including breasts and external genitalia. Four patients, two of whom were married, had vaginas varying from two to eight centimeters in length. In the remainder the vagina was represented by a shallow dimple only. Defi-

nite ovarian structures were palpated rectally in but two individuals. Five of the remaining seven patients were adults and all had small breasts and fine auxillary and pubic hair. Two children had hypospadias, inguinal hernia and cryptorchidism.

Six patients were considered to be male pseudohermaphrodites four of whom were members of the same family. An additional patient represented a form of ovarian agenesis. These all had negative sex chromatin determinations. One patient exhibiting normal external female development had normal ovaries at exploratory laparotomy. The other seven had positive sex chromatin. The two patients in whom chromosome patterns were studied both had the normal number of forty-six and their chromosomal and sex chromatin evaluations were in agreement.

In order to rule out coexisting defects further evaluation was undertaken in most patients. Ten intravenous pyelograms demonstrated two urinary tract anomalies. Six gynograms revealed conclusive evidence of adnexal structures in three patients, while an infantile uterus was noted in another. Chest films in all patients demonstrated one instance of dextrocardia and one instance of Sprengel's deformity of the scapula. In four male pseudohermaphrodites and two normal females 17-ketosteroid determinations were within normal limits, as were skull films, PBI and BMR values. A single FSH level was found to be elevated in a male pseudohermaphrodite.

Exploratory laparotomy in ten patients revealed only one patient with normal appearing tubes, ovaries, and uterus. However, all were infantile. Five patients had normal ovaries. Three of these had only rudimentary mullerian duct derivatives while the other two had normal tubes. Three patients had rudimentary testes. A single patient had only gonads of fibrous tissue.

Of the fifteen patients referred to the Medical Center with aplasia of the vagina, twelve underwent constructive surgery. A standard McIndoe procedure utilizing a split-thickness skin graft was performed in seven instances. The Wharton procedure was performed on four patients. One patient underwent a two stage procedure in which a dissection between bladder and rectum was followed in one week by the insertion of a graft-covered mold. Constructive surgery was not performed on three patients who were pseudohermaphrodites. Two of these were children while a third patient was married and had a satis-

factory vagina measuring 7 to 8 centimeters in length. A presacral neurectomy for relief of pelvic pain was performed on this patient.

### RESULTS

A satisfactory operative result was obtained in all twelve cases. A 50 per cent to 100 per cent take of the free skin graft was noted at the time of discharge in all patients having a McIndoe procedure. In the four patients in which a mold, but no graft was used, epithelialization was noted at the time of discharge on the 6th postoperative day in one. Another patient was discharged on the 14th postoperative day with no epithelialization, but scattered islands of epithelium were noted at the 5 week check-up before the patient was lost to follow-up. One patient had beginning epithelialization at 9 days with complete epithelialization at 4 months.

The only operative complication was a difficult dissection secondary to a previous corrective attempt. Postoperative complications were minor and included: urinary tract infections in two, atelectasis in one, and sloughing of the distal urethra from pressure necrosis in two patients. One patient required treatment of infection in the newly created vagina while a persistent stitch abscess in an inguinal incision occurred in another. Delayed postoperative complications included: one mild shortening of the vagina; one excessive granulation tissue; and one vaginal stenosis secondary to granulation tissue.

### DISCUSSION

Vaginal agenesis in the adult may present no symptom other than primary amenorrhea and is often not diagnosed until marriage is contemplated. The external genitalia are usually normal with the exception of a shallow or absent vaginal orifice. Jones<sup>11</sup> noted that twenty-one of thirty patients had no suggestion of a vagina while nine had only shallow vaginas up to five centimeters in length. He quoted McIndoe's report of fifty-eight of sixty-one patients with complete absence. Nine patients in our series had complete absence of the vagina.

Bryan, et al,<sup>9</sup> in a review of one hundred patients (twenty-six of whom underwent exploratory laparotomy) reported only four instances of vaginal agenesis with normal internal reproductive organs. Ten patients had normal tubes and ovaries and an abnormal uterus, and five had normal tubes and ovaries and no uterus. Jones<sup>11</sup> carried out exploratory laparotomies on two of his pa-

tients and found normal ovaries and tubes and a midline thickening, suggesting an under developed uterus. Our findings were similar to the above.

Genetic evaluation of each patient is important. The simplest study is one of sex chromatin in cells from a buccal smear or in white blood cells. Many of the cells from genetic females (XX sex chromosomes) contain sex chromatin bodies while very few cells from genetic males (XY sex chromosomes) do so. Comparison of sex chromatin and physical findings will in most instances reveal any problems. If available, chromosome studies should also be done. Azouny<sup>32</sup> carried out cytogenetic studies on twelve patients with congenital absence of the vagina and found a normal 46 XX pattern in all.

A genetic abnormality present in males with 46 XY chromosomes, testicular feminization, must be distinguished from anomalous development of the vagina when normal secondary sexual characteristics are present. Decreased pubic hair and axillary hair, inguinal and labial nodes, and a family history of amenorrhea in female siblings suggest testicular feminization. Apparent congenital absence of the vagina in association with virilization should alert the physician to the possibility of congenital adrenal hyperplasia, male pseudohermaphrodite, or the rare true hermaphrodite.

In a significant number of cases absence of the uterus and vagina is associated with other congenital defects. Anomalies of the urinary tract are the most commonly associated ones. Jones<sup>11</sup> reported four of eleven patients with abnormalities of the urinary tract. Chawla<sup>33</sup> studied twenty-three cases of which eleven showed various abnormalities of the urinary tract, (five of which were solitary pelvic kidneys). He noted no symptoms referable to the urinary tract. Bryan, et al,<sup>9</sup> in his review of one hundred cases noted urinary tract abnormalities in twenty-one of thirty-one patients evaluated. Stabler<sup>38</sup> rejected two of nineteen patients because of pelvic kidney. Ten other patients had urinary tract abnormalities. In our series one patient was noted to have a pelvic kidney and one patient had a partial duplication of the right ureter.

Chawla<sup>33</sup> also noted skeletal defects in four patients. Bryan, et al,<sup>9</sup> reported six skeletal defects in one-hundred patients. One patient in this series was found to have skeletal deformities consisting of torticollis, Sprengel's deformity of the

scapula, and cleft palate. She also had webbing of the neck, and asymmetry of the breasts. One patient with ovarian agenesis had delayed bone maturation. The male pseudohermaphrodites were noted to have inguinal herniae, hypospadias and cryptorchidism.

Surgical repair of vaginal agenesis is not indicated prior to adolescence. Miller<sup>9</sup> suggests that correction should be attempted between the ages of 16 and 18 years. At this time he feels the patient is mature enough to realize the importance of a functioning organ and yet has not had time to develop anxiety over her condition. Counsellor<sup>8</sup> on the other hand, feels that surgery should not be undertaken until marriage is contemplated. Barrows<sup>34</sup> also believes that except for drainage of an hematocolpos or hematometra, the procedure should be deferred until adult stature has been obtained and marriage has occurred or is contemplated. He further recommends the use of a prosthesis without skin grafts, in this way avoiding visible body scars and embarrassment. Miller<sup>35</sup> recommends surgery at a significantly early age to minimize psychological trauma and feels that when correction is made dependent on an offer of marriage, it emphasizes the abnormality and increases the psychological drawbacks which commonly go with anomalous congenital development of any kind.

The various corrective procedures available to the physician have been previously mentioned. In our series the McIndoe procedure was used most frequently and produced excellent results in almost all patients. The Wharton technique was used with equally good results except for the somewhat longer time required for complete epithelialization. In one patient Frank's technique for intermittent pressure was employed for 3 months prior to surgical correction by Wharton's technique. A two inch vagina was created by simple pressure alone. McEwen<sup>13</sup> reports two cases managed similarly. Bryan, et al,<sup>9</sup> reported fourteen and St. Loup reported four cases with excellent results. The latter author concluded that epithelialization occurred not only as a result of proliferation of vestibular epithelia but also because of proliferation of the remainder of the epithelial lamina that had not canalized during fetal development. Sheares<sup>25</sup> reported eighteen cases using a modified Wharton technique. Serial biopsies during healing indicated that the new epithelium crept up around the obturator like a sleeve. He

suggested that embryonic elements might be present in the tunnelled area which exerted a growth activating influence on the spreading sheets of epithelium.

The indications for the use of bowel in constructive surgery are mostly limited to failed grafting techniques, devitalized local conditions, and loss of the vagina following treatment of various conditions in contiguous structures.<sup>39</sup> Bryan, et al,<sup>9</sup> reported fourteen cases operated by the Baldwin technique. Excellent results were obtained in only three patients. One patient developed fecal fistula and intestinal obstruction, and four others died of obstruction and peritonitis. Pratt<sup>39</sup> reported four cases in which the bowel was utilized and Zangle reported his fourteen cases all with excellent results.

An essential part of postoperative treatment is the wearing of an obturator for many months. There is a tendency for the vagina to narrow down when the obturator is removed for even a few hours. This period of contraction may persist for many months or years and is partially dependent upon the sexual activity of the patient. Information on the length of time the mold was required postoperatively was available in only two of our patients. One patient 3 years postoperatively could leave the mold out 48 hours and another stopped using the obturator 14 months after surgery. We recommend a minimum of 2 years use even in those who are quite active sexually.

The obturator itself can and has been composed of everything from an iodoform filled condom to a mold of dental stent. Plastic, glass, and balsa wood covered with a condom are the commonly used materials. Pressure necroses under the distal urethra and in the posterior forchette have been reported with the plastic and glass molds. McEwen<sup>13</sup> devised a mold shaped somewhat like a nasal bulb syringe with a sten. This type device is inserted large end first and requires no fixation as it lies above the levator ani and sphincter vulvar muscles. Stabler<sup>38</sup> formed an obturator flattened in the A-P diameter with a shape roughly that of a spectacle case. It is tapered with a groove for the urethra, and is self retaining and does not tend to rotate. We use a plastic mold about 4-5 inches in length and 1½-2 inches in diameter.

Final evaluation of the success of a surgical procedure must be in the functional results. Grafted epithelium from the thigh remains intact for a

considerable period of time. Whether it is ultimately replaced by vestibular epithelium is unproven. St. Loup<sup>10</sup> has shown with tissue biopsy that vaginal lining derived from proliferation of vestibular epithelium responds in a normal cyclic fashion. Masters and Johnson<sup>40</sup> studied the psychosexual and physiologic responses of three individuals. Two subjects had vaginas constructed by the McIndoe technique and a third formed by the Frank method. They found that cytological evaluation of the artificial vagina was similar to that of the normal vagina. Likewise, little difference was noted during sexual stimulation. Vaginal lubrication occurred but was less than in the normal vagina. Dilatation, contraction, and vasocongestive changes during the plateau and orgasmic phase of sexual excitement were similar.

Pilkington,<sup>41</sup> Shears,<sup>25</sup> and St. Loup,<sup>10</sup> have reported pregnancies and vaginal deliveries in patients after construction of artificial vaginas. No pregnancies have occurred in our series, but all patients have been able to lead sexually normal lives. The epithelial lining has assumed the texture and rugal appearance of normal vaginal mucosa, and the epithelium in one Negro patient has lost much of its pigment. No biopsy studies to determine cyclic response to ovarian hormones have been performed in this group of patients.

Of interest are the results in the four patients with ambiguous genitalia. Clitorectomy was performed in two and an artificial vagina created in all four. Following removal of testes or streak ovaries at laparotomy, they were placed on systemic estrogen therapy. All are capable of functioning sexually as females, and all have been significantly assisted in adjusting to a more normal way of life.

### SUMMARY

Fifteen patients exhibiting vaginal agenesis have been seen at the University of Arkansas Medical Center during the last 25 years. Etiological factors causing this diagnosis have been presented. The operative treatment, results, and follow-up have been discussed.

---

### EDITORIAL Comments

#### **Stacy R. Stephens, M.D.**

Congenital anomalies involving the female genitalia, while rare, nevertheless do occur from time-to-time. These should be recognized at or near birth. At each delivery the genitalia should

be observed and a definite gender assigned. If there be doubt, and in some instances there may well be, then proper consultation should be obtained.

As the authors state, failure of secretion of male type hormones at a critical period of development will allow development of female genitalia even in the genetic male. Likewise, an excess of androgen from many sources may have a virilizing effect on the genetic female. Early recognition and treatment of a gross abnormality in the external genitalia of either sex are essential if proper gender orientation and psychosexual development are to occur.

Failure to menstruate or to develop secondary sexual characteristics at or near the age of menarche may be the first indication that a congenital malformation of the internal female genitalia exists. Certainly, evaluation of the pelvis to rule out such anomalies should be done if a girl shows no signs of menarche by 15 years of age. If physical examination reveals a normal pelvis, she may be followed for another year before a more comprehensive evaluation need be undertaken. However, the girl who has absence of one or more pelvic organs should be further evaluated as outlined by the authors. Exploratory laparotomy may be necessary to confirm the diagnosis.

While vaginal construction may be deferred it is important to provide hormonal support in these young girls in order to insure female body build and breast development. Vaginal construction itself varies in each patient. I have performed this procedure in the single college student, in those approaching marriage, and in women married for many years. The importance of long-term continuous use of the obturator has been properly stressed by the authors.

Thus, with the proper operative technique and long-term patient cooperation, the chances of a functional vagina of normal length and depth are excellent.

### BIBLIOGRAPHY

1. Northcutt, R. C., et al, Med. Ann. D. C. 35:316-9, 1966.
2. Engstad, J. E., Lancet 1:329, 1917.
3. Owens, N., Surgery 12:139, 1942.
4. Bryan, A. L., Nigro, J. A., Counseller, V., Surg. Gynec. & Obstet. 88:79, 1949.
5. Meijer, R., et al, New York J. Med. 15:2424, 1966.
6. Parsons, L., & Sommers, S., Gynecology, Philadelphia, London, p. 72, 1963.

## VAGINAL AGENESIS

7. Miller, N. F., Stont, W., *Obstet. & Gynec.* 9:48, 1957.
8. Counseller, V. S., *Texas J. Med.*, 62:63, 1966.
9. Bryan, A. L., Nigro, J. A., Counseller, V., *Surg, Gynec. & Obstet.* 88:79, 1949.
10. St. Loup, E., *J. Int. Coll. Surgeons* 28:598, 1957.
11. Jones, H. W., Jr., *Clin. Obstet. & Gynec* 2:1053-66, 1959.
12. McEwen, D. C., *Canad. Med. Assn. J.*, 81:588-9, 1959.
13. McEwen, D. C., *Canad. Med. Ass. J.*, 81:588-9, 1959.
14. Graves, W. P., *Gynecology*, Ed. I, Philadelphia, 1916, W. B. Sanders Co., p. 567.
15. Davis, C. H., Cron, R., *Am. J. Obstet. & Gynec.* 15:196, 1928.
16. Falls, F., *Am. J. Obstet. & Gynec.* 40:906, 1940.
17. Frank, R. T., Geist, S. H., *S. Clinic North Am.* 12:305, 1932.
18. Grad, Herman, *Surg., Gynec. & Obstet.* 54:200, 1932.
19. Dannreuther, W. T., *Am. J. Obstet. & Gynec.* 35:452, 1938.
20. Flynn, C. W., & Duckett, J. W., *Surg., Gynec. & Obstet.* 62:753, 1936.
21. Steinmetz, E. P., *W Journal of Surg.*, 48:169, 1940.
22. Baldwin, J. F., *Am. J. Obstet.* 56:636, 1907.
23. TeLinde, R. W., *Operative Gynecology* 3rd Edition, Philadelphia, Montreal, p. 717, 1962.
24. Zangl, A., *D's Colon. & Rectum*, 8:62, 1965.
25. Sheares, B. H., *J. Obstet. Gynaec., Brit. Emp.* 67:24-31, 1960.
26. McIndoe, A. H., Bannister, J. B., *J. Obstet. & Gynaec., Brit. Emp.* 45:490, 1938.
27. Wharton, L., *Ann. Surgery*, 107:842, 1938.
28. Frank, R. T., *Am. J. Obstet. & Gynec.* 35:1053, 1938.
29. Frank, R. T., *N. Y. State J. Med.* 40:1669, 1940.
30. Sargis, H. T., Wylie, B., Thomay, W. S., Kalani, H., *Am. J. Obstet. & Gynec.* 79:67-72, 1960.
31. Williams, E. A., *J. Obstet. & Gynec. Brit. Comm.* 71:511-2, 1964.
32. Azoury, R. S., et al, *Am. J. Obstet. & Gynec.* 94:178-80, 1966.
33. Chawla, S., et al, *Brit. Med. J.* 5500:1398-400, 1966.
34. Barrows, D. N., *Am. J. Obstet. & Gynec.* 73:609, 1957.
35. Miller, W. F., et al., *Am. J. Obstet. & Gynec.* 50:735, 1945.
36. McIndoe, A., *Proc. Roy. Soc. Med.* 52:952, 1959.
37. Miller, L., Hankin, M., *J. Einstein, Med. Cent.* 8:171-2, 1960
38. Stabler, F., *J. Obstet. & Gynaec. Brit. Comm.* 73:463-6, 1966.
39. Pratt, J. H., *Proc. Mayo Clin.* 36:34-40, 1961.
40. Masters, W. H., & Johnson, J. E., *Western J. Surg.* 69: 192, 1961.
41. Pilkington, J. W., *Amer. J. Obstet. & Gynec.*, 78:804-5, 1959.



### Glomerular Cysts: Unusual Variety of "Polycystic Kidneys"

J. Vlachos (5 Akademias Ave., Athens, Greece) and V. Tsakraklidis, *Amer J. Dis Child* 4:379-384 (Oct.) 1967

Two cases of glomerular cysts noted in newborn infants were analyzed. On necropsy multiple primary, minute glomerular cysts occupying the outer part of the cortex and pronounced fetal lobulation were present in both kidneys. Many of these cysts were grossly visible, others were not. Cystic disease was not present in other organs.

Two cases of glomerular cysts noted in newborn infants were analyzed. Since the majority of renal corpuscles remained intact and symptoms of renal insufficiency were not evident in these cases, they were considered mild forms of the disease. A severe form of the disease has also been reported by others.

---

### Obstetric Complications and School Performance

D. J. P. Barker and J. H. Edwards (Medical School, Birmingham, England) *Brit Med J* 3:695-698 (Sept 16) 1967

Records obtained at birth on punch cards from 1950 to 1954 were linked with school examination results ten years later, and the 50,000 successful linkages sorted into 6,000 sibships. An analysis of the intellectual performance of the children, as assessed by these exams, using sibs as controls, showed no marked association with any obstetric or neonatal complication. In particular in non-hemolytic jaundice, birth injury or asphyxia, breech delivery or cesarean section no impairment was demonstrable. There was suggestive evidence of impairment associated with toxemia. Twins and triplets showed severe impairment. Within sibships of any defined size there was a reduction in test performance with every increase in birth rank.

## WHAT IS YOUR DIAGNOSIS?

Prepared by the  
Department of Radiology, University of Arkansas  
School of Medicine, Little Rock

See Answer on Page 348



HISTORY: 7-year-old white girl with repeated respiratory tract infection.

## ELECTROCARDIOGRAM

## OF THE MONTH



• • • • • • • • • • • • • • • •

AGE: 53 SEX: F BUILD: Medium BLOOD PRESSURE: 90/?

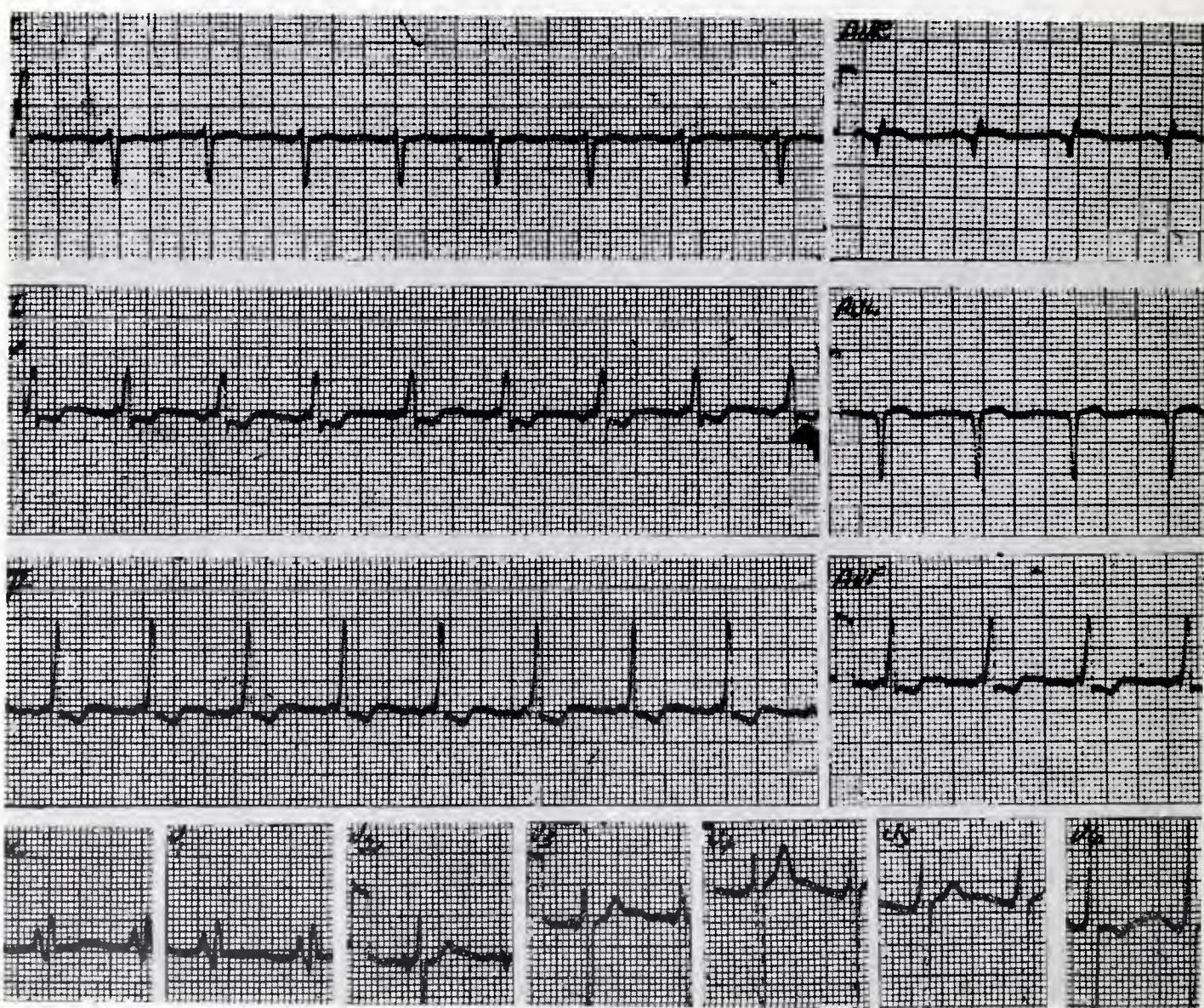
CARDIAC DIAGNOSIS: Rheumatic heart disease, congestive failure.

OTHER DIAGNOSES: None

MEDICATION: Digitoxin, discontinued 3 days prior to ECG.

HISTORY: Congestive failure first appeared 1 year previously.

See Answer on Page 348



The Department of Medicine, University of Arkansas Medical Center  
James S. Taylor, M.D., Professor of Medicine

## VITAL STATISTICS

### Calendar Year 1966

The Bureau of Vital Statistics was originated under Act 96 of 1913, which was repealed by the new Vital Statistics Act of 1965—Act 471. Under the new Act, the Bureau is charged with the filing, compilation, analysis, presentation, and distribution of statistical events which include births, deaths, fetal deaths, marriages, divorces and annulments, legal separations, legitimations, legal changes of names, and adoptions. The records of these events are bound in volumes and indexed.

A total of 34,460 current resident live births were recorded during the calendar year 1966 representing a rate of 19.29 per 1,000 population. A total of 18,327 resident deaths were recorded, representing a rate of 10.25 per 1,000 population. Also, a total of 637 fetal deaths were recorded, representing a rate of 18.5 per 1,000 live births.

The ten leading causes of death for the year 1966 were as follows:

Cause of Death & Code	Total	Percent of Total	Rate per 100,000 Pop.
1. Heart disease (410-443)	6,789	37.04	380.1
2. Cancer (140-207)	2,686	14.66	150.1
3. Vascular lesions (330-334)	2,586	14.11	144.8
4. Accidents (all types)	1,340	7.31	75.0
5. Pneumonia and Influenza (480-493)	585	3.19	32.7
6. Diabetes mellitus (260)	283	1.54	15.8
7. Diseases of early infancy (770-776)	261	1.42	14.6
8. Other diseases of intestines & Peritoneum (570-578)	197	1.07	11.0
9. Birth injuries (760-769)	171	.93	9.6
10. Nephritis, Nephrosis (590-594)	158	.86	8.8

These ten leading causes of death account for 15,056 deaths, which represent 82.15 percent of all resident deaths (18,327) recorded during the year 1966, reflecting for these ten conditions a rate of 842.9 per 100,000 population. In addition, there were 914 non-resident deaths recorded during the year 1966 for a total of 19,241 deaths in Arkansas.

Microfilm copies of all certificates of birth, death, and fetal death for Arkansas and ten percent sample of all death records are mailed monthly to the Division of Data Processing, National Center for Health Statistics, Research Triangle Park, North Carolina. Photostats of certificates of birth, death, and fetal death of non-residents are mailed monthly to the Division of Vital Statistics, National Center for Health Statistics, Washington, D. C. so that data from other states can be properly included in national statistics.

The marriage and divorce section of the Bureau of Vital Statistics is concerned with the key-punching and preparation of data on Arkansas marriage and divorce records. A project is now under way for the indexing of marriage records dating from 1917 and divorce records dating from 1923. Statistical data obtained from these records is used as the basis for the planning of many public health programs.

Some 1600 physicians, 74 coroners, approximately 250 funeral homes, and 240 hospitals collaborate with the Bureau of Vital Statistics in the proper preparation and completion of birth and death certificates. The 76 local Health Departments and six other local registrars are supervised by the Bureau in the registration of birth and death certificates.

Death records of approximately 1500 persons, twenty years of age and older, were issued each month to the county clerks of Arkansas as part of the requirements of Voter Registration Amendment 51 of 1965.

There were 4,947 delayed certificates of birth and 5,015 prior-to-the-year-1914 certificates of birth filed during 1966. Evidential requirements in the establishment of these previously unfiled records as set forth in Act 471 of 1965 continue to increase the effectiveness of these records in all matters involving proof of age or citizenship.

20,485 marriage records and 8,766 divorce dis-

position records were filed during the year 1966. The dispositions were divorce decrees granted, annulments, legal separations, and cases dismissed. Actual decrees granted represent approximately 95 percent of total dispositions.

A total of 1,392 adoptions, 273 legitimations,

and 332 legal changes of names were processed during the year 1966.

James O. Porter, Director  
Bureau of Vital Statistics  
Arkansas State Dept. of Health

## RESOLUTIONS



WHEREAS, the recent passing from this life of our esteemed colleague and friend, Dr. Daphney Earl White, has caused us all to be saddened, and WHEREAS, Dr. White served our country with patriotism and valor during World War I, and WHEREAS, he gave generously of his time and talents in serving the medical profession; as a member and officer of the Union County Medical Society, as a member of the Arkansas Board of Medical Examiners, as a Councilor to the Arkansas Medical Society, as a member of the American College of Surgeons and as a member of the International College of Surgeons, and

WHEREAS, Dr. White was active in community and civic affairs; to wit: the Kiwanis Club, the Masonic Lodge, the Shrine, and other civic organizations, and

WHEREAS, Dr. White endeared himself to countless patients as he ministered to them tirelessly for more than forty-five years; and

WHEREAS, the Union County Medical Society, the Warner Brown Hospital Medical Staff, and the Union Memorial Hospital Medical Staff set together to resolve:

**BE IT THEREFORE RESOLVED:**

THAT, an expression of our heartfelt loss and sympathy be extended to the bereaved family of Dr. White, and

THAT, a copy of this resolution shall be made a part of the permanent records of the Union County Medical Society, the Medical Staff of Warner Brown Hospital, and the Medical Staff of Union Memorial Hospital and that this resolution be published in the Journal of the Arkansas Medical Society and that a copy of this resolution be

forwarded to the family of Dr. Daphney Earl White.

Jacob P. Ellis, M.D.  
President, Union County Medical Society  
Ronald M. Lewis, M.D.  
Attested, Secretary  
C. F. Tommey, M.D.  
President, Warner Brown Hospital Medical Staff  
J. H. Pinson, M.D.  
Attested, Secretary  
George W. Warren, M.D.  
President, Union Memorial Hospital Medical Staff  
D. C. Sample, M.D.  
Attested, Secretary



### Diagnosis of Analgesic Nephropathy by Renal Biopsy

C. Abrams et al (Johannesburg General Hosp., Johannesburg, South Africa) *Med Proc* 13:501-506 (Sept., 30) 1967

A study of 14 patients with analgesic nephritis revealed that this disease differs from chronic pyelonephritis. In analgesic nephritis, the degree of interstitial fibrosis is more severe and inflammatory cells are fewer. There is a larger amount of lipofuscin pigment in the tubular cells in analgesic nephritis. Tubulo-sclerosis is of marked degree, with associated atrophy of the tubular cell. Most characteristic is necrobiosis in the tubular cell. Most characteristic is necrobiosis in the renal medulla; mummification of the tubular cells and a marked thickening of basement membranes and interstitial fibrosis occur.

## Bone Metabolism, Thyrocalcitonin, and Parathyroid Hormone

Alfred Kahn, Jr., M.D.

In areas where the medical profession feels that their knowledge is fairly complete, surprises sometimes occur. The metabolism of bone and calcium seemed fairly well worked out until about 1962, when it was noted that there was an apparent hypocalcemic factor operative in certain animal experiments. These studies led to the discovery of Thyrocalcitonin. This is discussed in Pechet's foreword to a Symposium on Thyrocalcitonin in the November, 1967 issue of *The American Journal of Medicine*. Thyrocalcitonin is a hypocalcemic factor originating in the thyroid gland.

Of this group of papers, the most comprehensive and the paper which should have been first in this Journal (but was not) was "The Regulation of Bone Resorption and Formation" by M. M. Pechet, E. Bobadilla, E. L. Carroll, and R. H. Hesse. The basis of their experiments, and their later descriptive texts was the rat; in these experiments, a single animal was followed for five days during which appropriate infusions via the vein and stomach while the urine was collected through a catheter. They use normal rats, rats with both the thyroid and parathyroid removed, and rats with just the parathyroid removed. In an animal with both the thyroid and parathyroid removed, parathyroid hormone injections cause an immediate increase in urinary phosphorous excretion plus hydroxyproline. The phosphorous diuresis is due to a decreased tubular resorption. The urine calcium is at first decreased and then increased. The pattern in rats is similar but not identical to that in humans. Parathyroid hormone has a direct effect on bone, too. On rats given no calcium, parathyroid hormone caused an elevated blood

calcium (also radioactive Strontium, which was in bone) when the only source was bone. Hydroxyproline excretion increased, and this was considered as evidence of destruction of collagen fibrils. Parathyroid hormone also causes an unexplained marked excretion of potassium. It also tends to promote the absorption of calcium and phosphorous from the gut.

The same rat preparation was used to study Thyrocalcitonin. These authors found that Thyrocalcitonin inhibited the action of parathyroid hormone in their preparation, and others report a similar effect even in tissue cultures. Thyrocalcitonin seems to work by inhibiting bone resorption. Radioactive Strontium implanted in bones is not mobilized by Thyrocalcitonin. Hydroxyproline, a constituent of collagen, was not mobilized and excreted by Thyrocalcitonin. The increased calcium excretion seen in response to the long term administration of parathyroid hormone is not seen in Thyrocalcitonin, and in fact, this is inhibited by Thyrocalcitonin even if parathyroid hormone is given. If calcium and Thyrocalcitonin are given simultaneously, there is a marked stimulus to increase the calcium retention.

Vitamin D<sub>3</sub> was administered by Pechet et al. to their rat preparation. It was found that there was a prompt increase in the excretion of hydroxyproline, calcium, and phosphorous. This indicates a dissolution of bone; it is, of course, associated with an elevated blood calcium. This vitamin D<sub>3</sub> effect is opposed by Thyrocalcitonin. Pechet states that for vitamin D<sub>3</sub> or parathyroid hormone to be effective, both must interact on the bone. The nature of this interaction is not known.

Lastly, Pechet points out that neutral phosphate solution will stimulate bone formation and will lower elevated blood calcium levels. It does not seem to be related to suppression of parathyroid hormone.

The other article of good considerable interest to the practicing physician in this symposium is entitled "Thyrocacitonin, Osteoporosis, and Osteolysis by H. Rasmussen and A. Tenenhouse. They feel that Osteolysis is the major factor in Osteoporosis. They base this on isotope kinetics and microradiography. The authors state that contrary to previous holdings that the Osteoclasts on the cell surface were the only cells which were metabolically active, the Osteocytes in the bone are active and when stimulated by parathyroid, show evidences of Osteolytic activity. Thus, these cells play a major role in shaping bone as well as in de-mineralization and re-mineralization. The individual Osteocyte is thought to play a somewhat limited role in bone metabolism. The Osteocyte appeared to be involved primarily in mineral homeostasis "whereas the surface resorption is normally of paramount importance in maintaining skeletal homeostasis, and only under conditions of severe or prolonged derangements of mineral metabolism does it become primarily involved in mineral metabolism."

The regulation of bone resorption they base on the interaction of parathyroid hormone and Thyrocacitonin. They believe that the parathyroid hormone has two temporal phases, the immediate due to the action on the kidney, and the delayed due to resorption of bone; they base this on studies of hydroxyproline which acts as a marker for bone resorption. The effects on bone

are carried out by the available cells immediately, then there is a delay while DNA and RNA are formed by new cells, which are recruited to osteolytic activity. Vitamin D, which is necessary for the action of parathyroid hormone, may mediate its effect by stimulating RNA and protein synthesis in the cells of the gut and bone. Thyrocacitonin inhibited bone resorption due to parathyroid hormone. Thyrocacitonin inhibits the osteocytes and perhaps other bone cells. Thyrocacitonin has no effect on calcium absorption from the gut. It is felt that the effect of thyrocacitonin on the kidney is produced by first causing a hypocalcemia, which in turn effects the renal tubules causing a phosphaturia.

The authors' view bone formation as less understood than osteolysis. Apparently, osteoblasts tend to regulate both matrix and mineral metabolism in bone formation. They feel that parathyroid hormone probably inhibits collagen formation in the bone matrix. It has not yet been proved that Thyrocacitonin inhibits this effect on bone matrix.

Rasmussen, et al, believe the biochemical basis for bone metabolism has to do with deterioration in the cell membranes for a preferential flow of ions; the ions then stimulate or inhibit enzymes which build or destroy bone. Perhaps, the immediate locus of action is in magnesium ions and their relation to the cells mitochondria. The authors state "the mechanism by which these two hormones (Parathyroid and thyrocacitonin) may regulate metabolism is by altering calcium ion to magnesium ion ratios in cellular systems, and the binding of these cations to key enzymes".



#### **Recovery of Hypothalamo-Pituitary-Adrenal Function After Corticosteroid Therapy**

T. Livanou, D. Ferriman and V. H. T. James  
(North Middlesex Hosp., Edmonton, London)  
*Lancet* 2:856-859 (Oct. 21) 1967

Investigation of basal plasma-11-hydroxycorticosteroid (11-OHcs) levels and of the plasma-11-OHcs response to insulin-induced hypoglycemia in controls, patients on steroid therapy, and patients at various intervals after discontinuing

steroid showed that both variables were depressed in patients on steroids. They eventually returned to normal in all patients when steroids were discontinued, but considerable individual variations were noted in the rate of recovery. Basal plasma-11-OHcs levels returned to normal more quickly than did the response to hypoglycemia; it was a year before a normal response to hypoglycemia was found in all patients. Doses of prednisone in excess of 7.5 mg/day delayed recovery. Evidence concerning the effect of duration was inconclusive.



## MEDICINE IN THE

### THE MONTH IN WASHINGTON

Washington, D.C.—The National Advisory Commission on Health Manpower reported that the nation's health care system must be improved to assure that quality health care is available to all Americans at a reasonable cost.

The 15-member Commission, in its report to President Johnson, urged a substantial expansion in the capacity of existing medical schools and continued development of new schools. At the same time, the advisory group said that "although the need for more physicians is urgent, the costs and dangers of a crash effort to increase production appear to outweigh the benefits."

The Commission, headed by J. Irwin Miller, chairman of the Cummins Engine Co., Columbus, Ind., was set up in May, 1966, by President Johnson to recommend bold, imaginative ways to meet health manpower needs. Five physicians signed the report, including Dwight Wilbur, M.D., President-Elect of the American Medical Association.

The Commission members agreed that tackling the problem of manpower, alone, would not cure present ills.

"... If additional personnel are employed in the present manner and within the present patterns and systems of care, they will not avert, or even perhaps alleviate, the crisis," the Commission said.

"Unless we improve the system through which health care is provided, care will continue to become less satisfactory, even though there are massive increases in costs and in numbers of health personnel."

The Commission recommendations were accompanied by an assertion that government alone is not big enough to solve the problem of health care for the American people.

The American Medical Association's House of Delegates at its recent meeting in Houston, Tex., approved a report of the Board of Trustees on the Commission's report. The Board stated:

"The 'Report of the National Advisory Commission on Health Manpower' reflects much of

the serious attention given to the evolving needs of health care long recognized, studied and implemented by the American Medical Association and other professional groups in the health fields.

"The House of Delegates and the Board of Trustees of the AMA have not had time to study the Report carefully. . . . However, it appears to recognize the needs arising from the rapid growth of the public's desire for health care. This attitude is the result of increasing awareness of the great advances in medical science and techniques, and of the prolongation of life for millions into middle and advanced ages. . . .

"The Report will receive the intensive study of the various expert groups within AMA and reports on their recommendations will be issued as soon as they can be developed properly. There appear to be some areas in which modifications will be necessary to assure attaining the objectives sought for advancement of health care for all citizens."

The Commission's proposals included:

—Federal funds in support of capital or operating costs of education should be provided to a medical school in such a way that they create economic incentives for the school to expand enrollment while improving its quality.

—The federal government should make available to any medical student loans to cover the full costs of tuition and living expenses during formal professional education. The student should be able to choose between repaying the loan from earnings over a period of years or giving two years of his time to approved national service apart from Selective Service obligations.

(Dr. Wilbur discussed from these two recommendations: "I believe the principle is not sound and that the recommendations are impractical, unnecessary, will not serve the purposes intended, and will be largely unacceptable to most students.")

—The federal government should give high priority to the support under university direction of

experimental programs which train and utilize new categories of health professionals.

—At a minimum, foreign-trained physicians who will have responsibility for patient care should pass tests equivalent to those for graduates of U.S. medical schools.

—The Selective Service Act should be amended to provide for the automatic transfer of the records of every draft-eligible health professional, upon his graduation from professional school, from the local board of his original registration to the local board in whose jurisdiction he works and for subsequent transfer with each change in the location of his work.

—The Selective Service Act should be amended to provide equal draft-liability for U.S. and foreign medical graduates.

—Service with the U.S. Public Health Service should be phased out as a substitute for the military obligation of health professionals.

—The Department of Defense should be instructed to encourage the greater use of the Military Medicare Amendments of 1965 and should study the feasibility of utilizing voluntarily obtained health professionals in military facilities located in the United States.

—Nursing should be made a more attractive profession by such measures as appropriate utilization of nursing skills, increased levels of professional responsibilities, improved salaries, more flexible hours for married women, and better retirement provisions.

—Programs for health care of the disadvantaged should be given highest priority and made available wherever needed.

—Professional societies, universities, and state governments should undertake, with federal support, studies on the development of guidelines for state licensure codes for health personnel.

—Professional societies and state governments should explore the possibility of periodic relicensing of physicians and other health professionals.

—Professional societies, health insurance organizations, and government should extend the development and effective use of a variety of peer review procedures in maintaining high quality health and medical care.

\* \* \* \* \*

President Johnson signed a \$281 million mental retardation bill with a statement that the nation still is not doing enough to solve the problem.

He said that in dealing with the problem of

mental retardation it was clearly the obligation of the nation to act. "We are not doing enough, we must do more, we are going to do more," Johnson said.

The bill strengthens federal aid for the construction of new facilities for the mentally retarded.

He also signed a three-year, \$589 million extension of federal aid for state public health programs.

It provides for federal licensing of clinical laboratories operating in interstate commerce unless they are run by pathologists, in which case the facilities would have to meet standards set by the American College of Pathologists or the American Hospital Association. Individual physicians operating labs for their own patients would not be affected by the new law.

---

#### SUMMARY OF ACTIONS OF THE HOUSE OF DELEGATES

HOUSTON, TEXAS — November 29, 1967 — The need for "positive leadership" and "visible action" by the medical profession and all other members of the health team was emphasized to Delegates at the 21st Clinical Convention by Milford O. Rouse, M.D., President of the AMA.

"The future of the individual physician, of patient care and of the methods by which it will be made available to all people do not depend on our efforts alone," the President said in his keynote address during Sunday's opening session. "They depend also on the future attitude of the nation toward free enterprise; on the degree of future national respect for individual initiative; and on the extent of future over-all acceptance of the concept that personal satisfaction and personal benefit are to be gained principally through personal endeavor."

Dr. Rouse pointed out that many things can be done only by government, or best by government, but added that many other things can be done only by private organizations and individual citizens working together.

The reason, he explained, is that actions of government often are necessarily negative. For example, Dr. Rouse said, "Government can pass laws against theft, but no law can make a people want to be honest. . . . Government can pass laws against drunkenness, but no law can make a people want sobriety."

However, he added, "Leaders in government

understandably see it as their duty to do for the people of this country whatever they believe, or whatever they are told by citizen groups, is not already being done. . . . When private citizens abdicate their responsibilities and ask the government to do a job, government responds in the only way it can: it passes more laws. . . . And every time another law is passed, it means another small or large restriction on somebody's freedom."

As citizens, Dr. Rouse said, "we have this choice when facing a situation that needs correcting: we can do it ourselves; or we can ask the government to pass a law" and set up an administrative mechanism to enforce it.

In regard to specific, current problems—the cost of health care and the growing need for more effective cooperation among health care professionals and sub-professionals—Dr. Rouse stated that "I believe sincerely that we have reached a point. . . . when we can no longer just cling to all of the traditions of our distinguished past. I believe the time has come for orderly, planned, meaningful change—not in the fundamentals of ethics or devotion to excellence; but in the more material features of efficiency, cost and methods of delivery" of health care.

"If we should fail to recognize the present as an opportunity for positive action. . . . I believe we would fail not only ourselves, but the people of this country, more and more of whom need and want more and more of the services we are uniquely able to render.

"Let us not make it necessary," he concluded, "for anybody else to direct the furnishing of those services."

\* \* \* \* \*

There was no lack of positive action in the Houston meeting, at which 238 out of 242 Delegates (98.3%) attended the final two sessions, dealing with 96 items of business, including 17 reports from the Board of Trustees; 20 from the four Standing Committees of the House; one special report each from the AMA-ERF and the Commission to Coordinate the Relationships of Medicine With Allied Health Professions and Services; and 57 resolutions from state medical societies or individual physicians.

Of those, the House adopted 43 without amendment; amended and adopted 22; referred 21; absorbed four into other adopted items; and rejected six.

### Distinguished Service Award

Owen H. Wangensteen, M.D., director of the Department of Surgery at University Hospitals, Minneapolis, was named the winner of the 1968 Distinguished Service Award.

The award will be presented to Dr. Wangensteen at the Annual Convention in San Francisco in June, 1968.

Under a change in the Bylaws, this is the first time the award winner has been selected at the Clinical Convention. Previously he was selected and the award was made at the Annual Convention.

### AMA-ERF Institute for Biomedical Research

In a special report on the AMA Education and Research Foundation, Charles L. Hudson, M.D., Immediate Past President of the AMA and President of the AMA-ERF, reported to the House that the Board of Directors of the AMA-ERF had "voted to endorse in principle the relocation of the Institute for Biomedical Research on, or contiguous to, the University of Chicago campus, and authorized the Executive Vice President, with appropriate other members of staff and the President and Secretary-Treasurer of the Foundation to negotiate a contract with the University of Chicago for consideration by the Board of Directors of the AMA-ERF."

The House approved the action of the Board of Directors of the AMA-ERF and endorsed "in principle" the relocation of the Institute "on or contiguous to the University of Chicago."

At the same time, the House requested the Board of the AMA-ERF "to present at each Clinical Convention a report on the projected budget of the Institute for Biomedical Research for the ensuing year and the amount of the projected contribution from the American Medical Association to the Institute during that period."

### Medical Education

Several actions were taken relating to medical education.

One was adoption of the Board of Trustees' summary of the Report of the Commission on Research. Fifteen recommendations were contained in the Commission report, two of which were seen as particularly significant.

Recommendation 12 encouraged research in the delivery of health care, "provided it is conducted under proper auspices and in accordance with sound research design and methodology." The House adopted it, with the understanding that

such support "should not be interpreted to imply any criticism of the present studies of the delivery of health care." Present efforts are productive, but the medical profession "should not hesitate to make known its interest in continued studies to improve the methods and quality of health care delivery."

Recommendation 13 was addressed to correcting the imbalance between biomedical research and education caused by the "heavy but desirable federal support of research." It stated that "there should be allotted a greatly increased amount for operational expenses of medical schools, to be matched by those schools through private or local governmental sources."

Again the House concurred, stressing the fact that its approval of the recommendation changes the policy of the AMA with respect to federal support for medical education. The change results in "an honest recognition that federal financial support is now accepted by the American medical schools." However, in adopting the recommendation, the House "emphatically urges that a matching formula be used" to "encourage medical schools to retain their independence."

The House also adopted a resolution that the AMA, through its Council on Medical Education, "utilize all appropriate influences to restore teaching to its proper place of prominence in medical education" instead of giving the lion's share of attention, honors and contributions to research scientists; and adopted 12 guidelines for medical staffs in hospitals with intern and resident training programs.

#### **Health Manpower**

A report was adopted on the "Report of the National Advisory Commission on Health Manpower," which was submitted to President Johnson on November 20.

The report was necessarily brief, since there had not been time to study and evaluate the Commission report in any depth, but it pointed out that the Commission's approach to health care problems indicated recognition of the need for orderly procedures rather than harmful "crash" programs. The emphasis in most of the Commission report is to center responsibility on the professional groups best able to evaluate and plan in health areas, rather than on government and non-professionals.

The House adopted the preliminary report; voted to enlarge the AMA Committee on Health

Manpower by four members to permit more careful and complete study in this area; and noted that copies of the complete Commission report will be sent to all Delegates and Alternates, requesting them to submit their comments to their constituent associations as soon as possible.

In addition, the House approved replacing the present AMA Commission to Coordinate the Relationships of Medicine With Allied Health Professions and Services with a new council of the Board of Trustees to be known as the Council on Allied Health Professions; and directed the Association to seek the establishment of a medically oriented federal Commission on Health Resources and Medical Manpower to assure properly balanced distribution of health personnel among government agencies, the armed forces and the civilian population.

Also with respect to health personnel, both professional and allied, the House asked that a report be made at the next meeting evaluating the foreign resident, intern and physician program; requested a study of the present professional liability implications in the use of allied medical personnel; and urged physicians to become acquainted with the programs of the American Association of Medical Assistants and to encourage their assistants to participate in its educational and certification programs.

#### **Health Care**

The House adopted a number of reports and resolutions relating to health care from the standpoint of the community and the individual patient.

One emphasizes that standards of medical care are set at the local level and calls attention to disturbing trends pointing to the possible establishment of medical care standards on a national basis.

Another commits the AMA to leadership in informing the public, the profession and other elements of the health care field as to practical means of moderating health care costs, the value of voluntary health insurance, expanding the medical manpower supply and improving the health care of the American people.

With respect to comprehensive planning of health facilities and services, the House urged state and local medical societies to emphasize a variety of activities to be undertaken in the area of over-all planning for governmental and private programs of health care, including "Continued

effort by the medical profession to improve federal legislation in this area and to emphasize the importance of local control."

The House reaffirmed that the procurement, processing, distribution or use of human blood and other human tissue is a medical service and is not the selling of a commodity. The Board of Trustees and the state associations were urged to support legislative action at federal and state levels to implement this concept.

The use of monitoring, defibrillation and resuscitative equipment by registered nurses in cases of cardiac emergencies was supported, with provisions regarding the nurse's training and the procedures established by the hospital medical staff.

Alcoholism was identified as a complex disease and the House recognized that the medical components of this entity are medicine's responsibility.

#### **Medicare and Medicaid**

In regard to medicare, the House reaffirmed its support for direct billing under the federal program and adopted a resolution regarding the collection and public dissemination of figures on the administrative costs of medicare.

The House resolved that the AMA continue its efforts to provide for the implementation of Title 19 in a manner which recognizes "the physician's right to bill directly all patients, including Title 19 patients, and allows the physician or his patient to be reimbursed his usual, customary and reasonable fee for his professional services;" and that the Association actively seek changes in the law that will secure "equal and simultaneous application to all jurisdictions."

#### **Other Legislative Matters**

A resolution urging continuing opposition to S-2299, the Long drug bill, and a report detailing the current status of HR-12080, the Social Security Amendments of 1967, were adopted.

The House also adopted recommendations that the AMA arrange a meeting of state medical association representatives to plan regional conferences of physicians to discuss matters of special interest to state legislators; and that state associations invite key lawmakers to attend AMA conferences.

Also approved was a resolution that state associations establish active legislative task forces at the congressional district level to maintain an effective working relationship with congressmen.

Support for AMPAC was reaffirmed in a resolution that requested the Board of Trustees to seek additional ways of helping AMPAC enlarge its activities and its assistance to state medical political action committees.

#### **Hospitals**

Because both medicare and medicaid provide payment for medical care rendered to patients by residents, the House resolved that the Association should study the problem and develop guidelines that are acceptable to supervising physicians, teaching institutions and government agencies involved in the payment process.

In addition, with respect to hospitals, the House adopted resolutions:

- Proposing the acceptance of physicians on hospital Boards of Trustees as the most effective form of liaison between the medical staff and hospital governing authorities.

- Protecting hospital privileges through "due process."

- Calling for more effective liaison and better coordination between medical staffs and local medical societies.

- Pointing out the need for simplifying attendance requirements for maintaining membership on hospital medical staffs.

- Pressing for prompt revision of the JCAH ruling on the use of externs in non-university affiliated hospitals, with the incorporation of adequate safeguards to insure the quality of programs of extern education.

In addition, model articles of incorporation for hospital medical staffs were made available for distribution in response to requests.

#### **AMA Organization and Procedures**

A number of changes were made in the Bylaws:

- Chapter XIV, Section 3(D) was updated, providing that four trustees will be elected annually, each for a three-year term and each limited to three terms.

- The terms in office of the President, President-Elect and Vice President all will begin and end at the close of the final session of the House of Delegates at the Annual Convention.

- Resolutions must be introduced to the House by a voting delegate.

- Nominations for Affiliate Membership in the AMA in classes (3), (4), (5) and (6) must be approved by the appropriate county and state medical society.

- A general officer's position is to be considered

vacant if he misses six consecutive regular meetings of the Board.

—The House approved giving the Vice President voting rights on the Board.

#### **Convention Sites**

Sites and dates for future conventions will be:

##### *Annual*

1968	San Francisco, June 16-20
1969	New York, July 13-17
1970	Chicago, June 21-25
1971	Atlantic City, June 20-24
1972	San Francisco, June 18-22
1973	New York, July 15-19
1974	Chicago, June 16-20

##### *Clinical*

1968	Miami Beach, December 1-4
1969	Denver, Nov. 30-Dec. 3
1970	Boston, Nov. 29-Dec. 2
1971	New Orleans, Nov. 28-Dec. 1
1972	Atlanta, November 26-29
1973	Anaheim, Cal., November 25-28
1974	Portland, Ore., December 1-4

#### **AMA Objectives**

The House adopted a statement of 11 purposes and responsibilities for the AMA, designed to define more clearly the over-all purpose as written in the Constitution: "To promote the science and art of medicine and the betterment of public health."

The entire statement follows:

#### **The Purposes and Responsibilities of the American Medical Association**

It is the responsibility of the American Medical Association, as the representative of the American medical profession, to continue to foster the advancement of medical science and the health of the American people.

Its continuing purposes are to meet this responsibility through the following means:

1. By encouraging the further development of medical knowledge, skills, techniques and drugs; and by maintaining the highest standards of practice and health care.
2. By creating incentives to attract increasing numbers of capable people into medicine and the other health-care professions.
3. By advancing and expanding the education of physicians and other groups in the health-care field.
4. By motivating skilled physicians who have the art of teaching to apply themselves to developing new generations of excellent practitioners.

5. By fostering programs that will encourage medical and health personnel to serve voluntarily in the areas of need for medical care.

6. By developing techniques and practices that will moderate the costs of good medical and health care.

7. By seeking out and fostering means of making all health-care facilities—physicians' offices, hospitals, laboratories, clinics and others—as efficient and economical as good medical practice and attention to human values will permit.

8. By combining the utilization of the latest knowledge for prevention and treatment with the vital healing force of the physician's personal knowledge of and devoting to his patient.

9. By maintaining the impetus of dedicated men and women in providing excellent health care by preserving the incentives and effectiveness of unshackled medical practice.

10. By maintaining the highest level of ethics and professional standards among all members of the medical profession.

11. By continuing to provide leadership and guidance to the medical profession of the world in meeting the health needs of changing populations.

#### **Additional Actions**

A memorial to Percy E. Hopkins, M.D., was read to the House and a copy was sent to Dr. Hopkins' widow. Dr. Hopkins served as a Trustee for seven years, the last four as its Chairman. He also served for eight years as a Delegate from Illinois.

The House reiterated its serious concern with respect to the Blue Cross Association's request for government funds for its research project on group practice.

Criteria for the evaluation of medical programs of national voluntary health agencies were adopted.

Three resolutions, referred to the Board, pointed out that many news stories criticizing the rising cost of health care place all or most of the responsibility squarely on physicians. As one of the resolutions put it, "Statistical reports relating to health care costs are misleading when they are referred to . . . as medical care costs; and . . . the improper labeling . . . may actually delay proper analysis of the several components."

### Educational Support Needs of Schools with Limited Financial Resources

Mounting demands for more physicians have resulted in the development of 15 new medical schools and nearly insurmountable pressures on all medical schools for considerable expansion of medical student enrollment.

Despite the impression that medical schools are wealthy, the precarious financial position of some schools is such that their very survival is at stake. Some method must be found to give high and selective priority to the financial crisis faced by a considerable number of U. S. medical schools. It would be a tragedy if any of the existing schools should fail to survive this period of growth and expansion.

While a number of different criteria may be

used to characterize the financial status of medical schools, the most pertinent for the present purpose are the number of students in the teaching program in relation to the number of faculty and to the dollar expenditure for the teaching program, and the dollar expenditure for the total medical school operation. Utilizing these criteria, 10 fully developed four-year schools fall into the lowest quartile of all medical schools for at least 4 of the 5 items enumerated in Table 1. It is likely that a different set of criteria might include some of these schools, exclude others, and encompass schools other than the ones listed here. These schools have been selected only to illustrate the magnitude of financial difficulty faced by a group of medical schools.

TABLE 1  
CHARACTERISTICS OF 10 MEDICAL SCHOOLS WITH LIMITED FINANCIAL RESOURCES

School	Total Expenditures*	Regular Operating Expenditures	Total Exp. per Student Equivalent	Student Equivalents per Faculty	Basic Operating Expenditures per Medical Student
A	\$ 7,018,224	\$ 1,909,284	\$ 7,939	6.3	\$ 4,300
B	6,197,397	1,533,926	7,003	6.0	3,534
C	5,078,573	1,496,420	7,502	4.7	5,196
D	4,524,308	2,351,563	8,167	6.2	6,514
E	4,480,463	2,507,190	3,263	11.6	6,615
F	3,895,941	1,920,369	3,955	8.2	4,837
G	3,740,394	2,148,839	6,813	3.9	6,211
H	3,705,951	2,553,097	5,340	6.3	6,464
I	3,076,574	1,663,342	7,040	5.8	4,907
J	1,755,838	1,374,420	3,124	11.0	3,894
Total	43,473,663	19,458,450			
10 School Averages	4,347,366	1,945,845	5,720	6.7	5,208
All School Averages	10,439,387	4,354,163	11,618	4.5	11,247
10 School Medians	4,188,202	1,914,826	7,098	6.2	5,052
All School Medians	8,572,824	3,977,147	10,169	4.5	10,917

\* All expenditure data are for the years 1965-66.

In comparison with the averages and medians for all U.S. medical schools, the 10 "have not" schools show expenditures for basic operating programs and total operations that are roughly half of the national level. Their students are being taught by a number of faculty that is also

approximately half of the national level. The enormity of the gap in resources from the richest to the poorest schools is evident in a comparison of the median total expenditure of these "have not" schools of \$4.2 million with the median total expenditure of the 10 best endowed schools

of \$22.2 million, a ratio of more than 5 to 1. The fact that the resources available to the single most affluent school were equal to 85 per cent of the total expenditures of the 10 schools in Table I provides an even more dramatic example of this disparity.

Some method for assessing what measures would be necessary to ameliorate some of the multiple deficiencies of the 10 "have not" schools is needed. For this purpose it might be useful to examine the expenditures that would be required for these 10 schools to reach levels of support comparable to the top of the fourth quartile (\$6 million). This is not meant to infer that this level of expenditures constitutes a required minimum for all schools with relatively low expenditures.

Table 2 compares the total expenditures of these 10 schools with the assumed support level of \$6 million and compares their basic program expenditures with an assumed expenditure level of \$2.5 million, showing the deficit, if any, for each school. The deficits resulting from these comparisons amount to \$17.7 million in additional total expenditure support, of which \$5.6 million would be required to raise basic program expenditures to the assumed level.

For these schools to attain the type of support needed to bring them into a position to respond adequately to some of the demands being made of them, it would be necessary for them to obtain additional annual financial support ranging from \$0.5 million to over \$4 million as indicated in Table 2.

TABLE 2  
DEFICITS IN TOTAL OPERATING EXPENDITURES AND  
REGULAR OPERATING PROGRAM EXPENDITURES FROM  
ASSUMED SUPPORT LEVELS

School	Deficits in Total Expenditures from \$6 Million Support Level	Deficits in Basic** Expenditures from \$2.5 Million Support Level
A	-----*	590,716
B	-----*	966,074
C	921,427	1,003,580
D	1,475,692	148,437
E	1,519,537	-----*
F	2,104,059	579,631
G	2,259,606	351,161
H	2,294,049	-----*
I	2,923,426	836,658
J	4,244,162	1,125,580
Total	17,741,958	5,601,837
Average	1,774,196	560,184

\*Schools exceeding the assumed minimum in a single category.

\*\*Basic or regular operating funds are general funds not restricted to any particular program.

## BOOK REVIEWS

*MEDICAL DEPARTMENT, UNITED STATES ARMY—NEURO-PSYCHIATRY IN WORLD WAR II, Volume I, Zone of Interior, Various Authors, Edited by Colonel Robert S. Anderson, MC, USA, 1966.*

This volume on Neuropsychiatry in World War II describes the overall program in this field. The volume contains the introduction, which includes Army psychiatry before World War II. Of a special interest is Part III on Military Psychiatry in practice. Part V contains some discussion of the post war problems in neuropsychiatry such as adjustment to civilian life, care of the psychiatric patient after discharge, etc. This book is of great interest to neuropsychiatrists, but of limited interest to other members of the profession.

*ANTILYMPHOCYTIC SERUM, Various Authors, Edited by G. E. W. Wolstenholme, O.B.E., M.A., F.R.C.P., F.I. Biol., Little, Brown and Company, Boston, 1967.*

*THE HUMAN ADRENAL CORTEX, Various Authors, Edited by G. E. W. Wolstenholme and Ruth Porter, Little, Brown and Company, Boston, 1967.*

*DRUG RESPONSES IN MAN, Various Authors, Edited by G. E. W. Wolstenholme, O.B.E., M.A., M.B., F.R.C.P., and Ruth Porter, M.R.C.P., Little, Brown and Company, Boston, 1967.*

*MYOTATIC, KINESTHETIC AND VESTIBULAR MECHANISMS, Various Authors, Edited by A. V. S. De Reuck, M.Sc., D.I.C., A.R.C.S., and Julie Knight, B.A., Little, Brown, and Company, Boston, 1967.*



### Differential Response to Thiazides and Spironolactone in Diagnosis of Primary Aldosteronism

G. Gwinup and T. Steinberg (1721 Griffin Ave., Los Angeles) *Arch Intern Med* 120:436-443 (Oct.) 1967

Four cases of primary aldosteronism are presented, three with hypokalemic alkalosis and one with normal serum electrolytes. In each case the blood pressure was only minimally reduced by the administration of thiazides, but it was normalized by the administration of spironolactone alone for several weeks. Primary aldosteronism may be distinguished from essential hypertension by the differential blood pressure response to thiazide and to spironolactone. In addition to indicating the diagnosis of primary aldosteronism, spironolactone may be helpful in predicting which cases are surgically curable, in the preoperative preparation of the patient for surgery, and in the long-term management of cases not suitable for surgery.

# T U B E R C U L O S I S



# A B S T R A C T S

Sponsored by Arkansas Tuberculosis Association

## ISONIAZID IN YOUNG TUBERCULIN REACTORS

Following tuberculin testing in San Francisco schools, 2,910 tuberculin positive students accepted isoniazid prophylaxis provided by the Health Department. Only one developed tuberculosis, in contrast to 25 of 1,192 students who refused chemoprophylaxis.

A study was undertaken in San Francisco to test the effectiveness of isoniazid in preventing tuberculous disease in tuberculin reactors who agreed to accept medication for one year. Members of the group were students who were found to be tuberculin positive in skin testing programs in both public and private schools. The results were compared with those of reactors from the same school population who refused medication. The parent or guardian made the decision whether or not the child would participate in the study.

Each year the San Francisco Health Department tuberculin tests children in the first, seventh, tenth, and twelfth grades, and also all new students. Every reactor in this study, conducted from January, 1958, to December, 1966, was retested within six weeks of the initial positive skin test to eliminate any false-positive reactions that might have resulted from transitory cross-reactions due to atypical mycobacteria. Students negative to the second test were excluded from the study.

Of 11,567 students who reacted to the second test during the period of the study, 7,465, or 64.5 per cent, were followed by private physicians, and 4,102, or 35.5 per cent, by the Health Department. The Health Department recommended isoniazid prophylaxis for every student it followed, and 2,910, or 70.9 per cent, accepted; 1,192, or 29.1 per cent, refused.

Under the school program, every positive reactor and his immediate family group are examined

to determine whether active clinical tuberculosis is present. Those not cared for by private physicians are followed in the Chest Clinic at San Francisco General Hospital, with chest X-rays repeated at three-month intervals during the first year, at six-month intervals during the second and third years, and annually thereafter until the student is 22 years old.

In the chemoprophylaxis study, students in the treated group reported to the Chest Clinic once a month for one year to receive their medication. During the first year of observation, the treated reactors had eight clinic visits more than the untreated, but subsequent services were identical for both groups. The prescribed dose of isoniazid for the treated students was 10 mg. per kilogram of body weight a day, with a maximum of 300 mg. a day in a single dose.

The public health nurse who interviewed each student at every clinic visit was principally responsible for evaluating the cooperativeness of the students being treated in taking medication and in keeping appointments.

Since the beginning of the study 4,102 students with tuberculin reactions have been followed for one or more years, 2,910 of these being in the isoniazid prophylaxis group and 1,192 in the untreated group.

Of the 2,910 treated, tuberculosis developed in one student who was a converter, that is, was known to have been tuberculin negative within two years of entering the study. This is a case rate for the treated group of 0.34 per 1,000. Among the 1,192 students in the untreated group, there were 25 cases of tuberculosis, four in the converters and 21 in reactors. This is a case rate of 20.9 per 1,000.

## CLINICAL DISEASE

A review of the distribution of clinical disease in the untreated group reveals that 10 students had primary disease, one had cervical lymphadenitis, five had minimal tuberculosis, and nine had moderately advanced tuberculosis. The dis-

FRANCIS J. CURRY, M.D.; *The New England Journal of Medicine*, September 14, 1967.

tribution of cases according to race indicates that 15 were white, of whom 10 were Latin-American; four were Negro, four were Chinese, and two were Filipino.

In 17 of the 25 students in whom clinical tuberculosis developed, the diagnosis was made within 30 months of the first known positive tuberculin skin test, and in nine it was made during the first nine months. All primary tuberculosis developed within 15 months, in contrast to the reinfection type, which developed from 13 to 97 months after entry into the study. The size of the tuberculin reaction was 15 mm. or more in 20 of the cases, between 9 and 13 mm. in the other five.

The majority of reactors were children of immigrants and migrants who had recently moved to San Francisco. A large number were from Hong Kong, the Philippine Islands, Central and South America, and Europe. There were also many reactors among migrants from the Southern states, mostly Negroes.

In the treated group, a supply of medication to cover five weeks was given at each clinic visit in case of an unforeseen circumstance that might prevent the student from keeping his next appointment on the specified day. When a participant missed his regular appointment and failed to appear at the next clinic session, the school public health nurse or the district public health nurse was notified and urged him to resume his clinic visits.

Good cooperation was reported for 95.5 per cent of the participants, due largely to the result of the efforts of the public health nurse.

#### COST OF PROGRAM

The cost of isoniazid prophylaxis will vary from area to area, depending upon differences in fees for professional services, whether or not these services can be absorbed by a pre-existing clinic, and whether or not the local health department has a routine program for the prolonged observation of reactors.

In San Francisco, the total cost of chemoprophylaxis for one year was \$79.60 per patient. The cost of follow-up examinations during the first year for the untreated group was \$30.60 per patient. Therefore, the net cost for isoniazid prophylaxis was \$48.96 per patient.

If none of the 4,102 reactors had received isoniazid, and if the case rate for the untreated students had prevailed, clinical tuberculosis would have developed in 86 students. Assuming that this is true, isoniazid prophylaxis prevented clinical disease in 60 students among the 2,910 treated reactors.

Furthermore, tuberculous patients from families of lower economic levels who live in overcrowded, substandard housing, and usually on inadequate diets, are hospitalized longer than more affluent patients with better homes. Hospitalization is prolonged for social reasons, so that the cost of patient care for this group is much greater. Thus, the prevention of clinical disease resulted in significant savings to the community.

The untreated comparative group participated in this study solely because it was mandatory as part of the school health program. This type of patient, by refusing to participate, has been difficult, if not impossible, to evaluate.

#### ANSWER—What's Your Diagnosis?

**DIAGNOSIS:** Cystic fibrosis.

**X-RAY FINDINGS:** Diffuse infiltrates with dilatation of the bronchi and persistent emphysema.

#### ANSWER—Electrocardiogram of the Month

**RATE:** 96    **RHYTHM:** A-V nodal  
**PR:** —sec.    **QRS:** .08 sec.    **QT:** .30 sec.

#### SIGNIFICANT ABNORMALITIES:

P waves abnormal in direction, short P-R interval. Delayed intrinsicoid deflection, right. Abnormal RS-T, T changes.

#### INTERPRETATION: Abnormal

A-V nodal rhythm.

Right Ventricular hypertrophy.

RS-T, T changes, non-specific type.

#### COMMENT:

The abnormal rhythm was due to digitalis toxicity, probably in association with hypokalemia because of the U waves being on the descending limb of T.

March, 1968

# THE JOURNAL OF THE *Arkansas* MEDICAL SOCIETY

Vol. 64 No. 10

FORT SMITH, ARKANSAS

**92nd ANNUAL SESSION  
Arkansas Medical Society  
ARLINGTON HOTEL, HOT SPRINGS, APRIL 21-24, 1968**

Part of the fine art of medicine

## DARVON® COMPOUND-65

Each Pulvule® contains 65 mg. propoxyphene hydrochloride, 227 mg. aspirin, 162 mg. phenacetin, and 32.4 mg. caffeine.

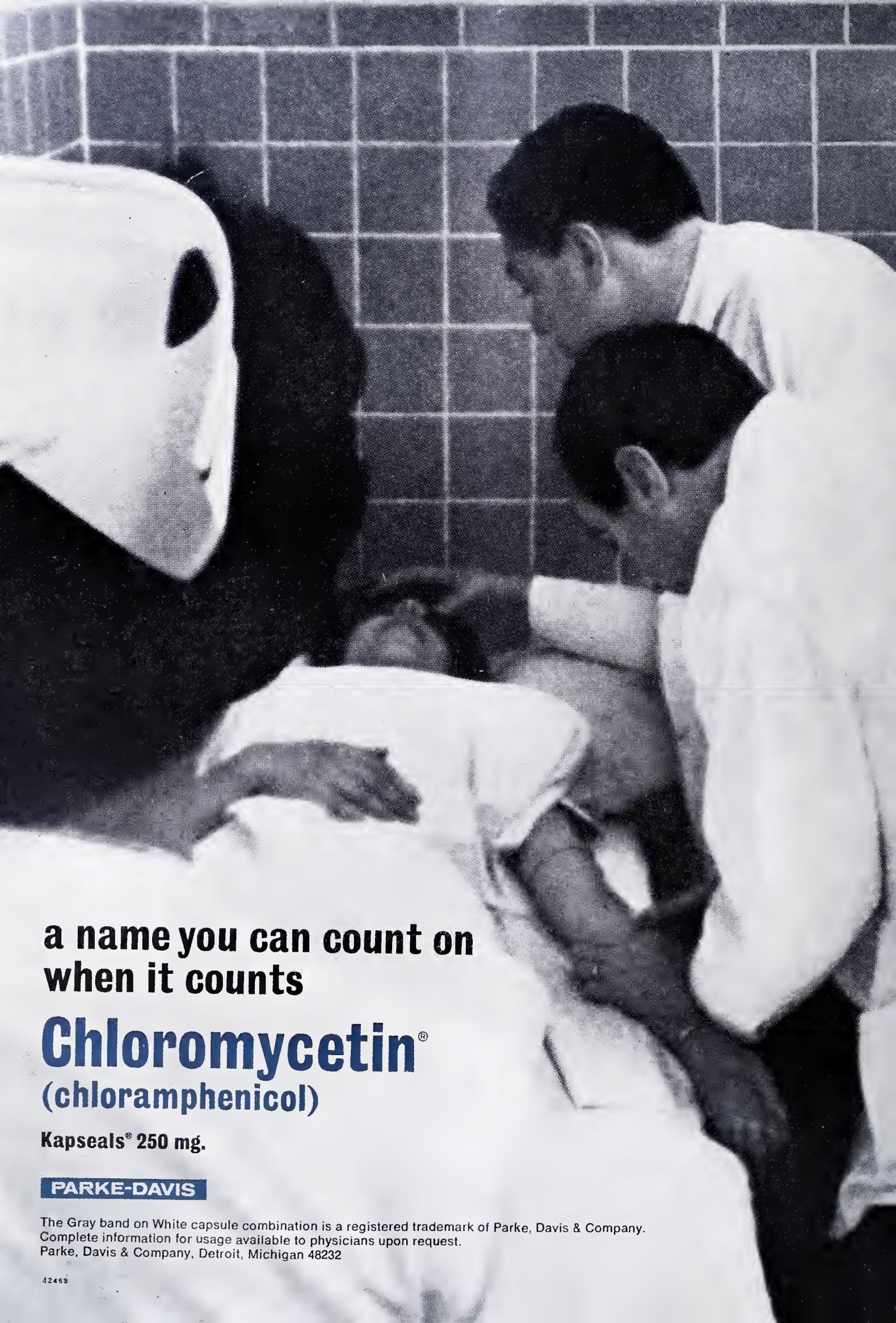
Additional information available to the medical profession upon request.  
ELI LILLY AND COMPANY  
INDIANAPOLIS, INDIANA 46206



U.C. MEDICAL CENTER LIBRARY

APR 2 1968

San Francisco 94122



a name you can count on  
when it counts

# Chloromycetin® (chloramphenicol)

Kapsseals® 250 mg.

**PARKE-DAVIS**

The Gray band on White capsule combination is a registered trademark of Parke, Davis & Company.  
Complete information for usage available to physicians upon request.  
Parke, Davis & Company, Detroit, Michigan 48232

# *Lutrexin*<sup>®</sup>

**HW&D BRAND OF LUTUTRIN**

**3000 UNIT TABLETS**

**IN THE TREATMENT OF FUNCTIONAL DYSMENORRHEA AND SELECTED CASES OF  
PREMATURE LABOR AND 2ND AND 3RD TRIMESTER THREATENED ABORTION**

- LUTREXIN, the non-steroid "uterine relaxing factor" has been found to be useful by many clinicians in controlling abnormal uterine activity.
- Literature on indications and dosage available on request.
- No side effects have been reported, even when massive doses (25 tablets per day) were administered.
- Supplied in bottles of twenty-five 3,000 unit tablets.



(In vivo measurement of Lutrexin on contracting  
uterine muscle of the guinea pig.)

**HYNSON, WESTCOTT & DUNNING, INC.**

(LTR23)



BALTIMORE, MARYLAND 21201

THE  
JOURNAL OF THE  
*Arkansas*  
MEDICAL SOCIETY

Owned by

THE ARKANSAS MEDICAL SOCIETY  
And Published Under Direction of the Council

ALFRED KAHN, JR., M.D., Editor

1300 West Sixth Street Little Rock, Arkansas

MR. PAUL C. SCHAEFER, Business Manager  
218 Kelley Bldg. Fort Smith, Arkansas

LITTLE ROCK BUSINESS OFFICE

114 E. Second St. Little Rock, Arkansas

OFFICERS OF THE ARKANSAS MEDICAL SOCIETY

JOSEPH A. NORTON, President	Little Rock
H. W. THOMAS, President-Elect	Dermott
JEROME LEVY, First Vice President	Little Rock
DAVID H. PONTIUS, Second Vice President	West Memphis
GEORGE F. WYNNE, Third Vice President	Warren
ELVIN SHUFFIELD, Secretary	Little Rock
W. R. BROOKSHIER, Secretary Emeritus	Fort Smith
BEN N. SALTZMAN, Treasurer	Mountain Home
JOHN P. PRICE, Speaker, House of Delegates	Monticello
AMAIL CHUDY, Vice Speaker, House of Delegates	North Little Rock
ALFRED KAHN, JR., Journal Editor	Little Rock
JAMES M. KOLB, SR., Delegate to AMA	Clarksville
JACK KENNEDY, Delegate to AMA	Arkadelphia
C. C. LONG, Alternate Delegate to AMA	Ozark
ALFRED KAHN, JR., Alternate Delegate to AMA	Little Rock
MR. PAUL C. SCHAEFER, Executive Vice President, P.O. Box 1208	Fort Smith

COUNCILORS

First District	ELDON FAIRLEY	Osceola
	B. P. RANEY	Jonesboro
Second District	PAUL GRAY	Batesville
	HUGH R. EDWARDS	Searcy
Third District	PAUL MILLAR	Stuttgart
	L. J. P. BELL	Helena
Fourth District	T. E. TOWNSEND	Pine Bluff
	ALPERT W. LAZENBY	Dumas
Fifth District	KENNETH R. DUZAN	El Dorado
	PAUL SIZEMORE	Magnolia
Sixth District	KARLTON H. KEMP	Texarkana
	JOHN P. WOOD	Mena
Seventh District	JACK KENNEDY	Arkadelphia
	ROBERT F. McCRARY	Hot Springs
Eighth District	WILLIAM PAYTON KOLB	Little Rock
	JAMES R. MORRISON	Little Rock
Ninth District	STANLEY APPLEGATE	Springdale
	ROSS FOWLER	Harrison
Tenth District	C. C. LONG	Ozark
	A. S. KOENIG	Fort Smith

The Advertising policy of this JOURNAL is governed by the PRINCIPLES OF ADVERTISING of the State Medical Journal Advertising Bureau, Inc., by the Advertising Committee of the Bureau and by the Council of the Arkansas Medical Society.

EXCLUSIVE PUBLICATION—Articles are accepted for publication on the condition that they are contributed solely to this JOURNAL.

COPYRIGHT 1968 — By the JOURNAL of the Arkansas Medical Society.

NEWS—Our readers are requested to send in items of news, also marked copies of newspapers containing matter of interest to the membership.

Notice on Form 3579-P to be sent to Arkansas Medical Society, 218 Kelley Building, Fort Smith, Arkansas 72901. Published monthly under direction of the Council, Arkansas Medical Society, Vol. 64, No. 10. Subscriptions \$3.00 a year. Single copies 50 cents. Entered as second class matter, May 1, 1955, in the post office at Little Rock, Arkansas, under the Act of Congress of March, 1879. Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized August 1, 1918. Second-class postage paid at Little Rock, Arkansas.

SCIENTIFIC ARTICLES

Massive Resection of the Liver

- Following Blunt Trauma ..... 349  
*Robert J. Smith, M.D.*

- Test of Pituitary—Adrenal Function ..... 353  
*James R. Givens, M.D.*

FORUM FROM THE DEPT.  
OF OBGYN

- Airhenoblastoma of the Ovary: A  
Review of the Literature and Re-  
port of Two Cases ..... 359  
*Jack W. Harrison, M.D.*

FEATURES

- What is Your Diagnosis? ..... 366  
Electrocardiogram ..... 367  
Arkansas Public Health ..... 368  
Editorial ..... 372  
Resolutions ..... 373  
Medicine in the News ..... 373  
Announcements and Things to Come ..... 376  
Personal and News Items ..... 377  
Proceedings of Societies ..... 379  
New Members ..... 379  
Obituary ..... 380  
Tuberculosis Abstracts ..... 381  
Convention Program Section ..... 383

## Massive Resection of the Liver Following Blunt Trauma

Robert J. Smith, M.D.\*

Injuries to the liver from blunt trauma are increasing in frequency. Methods of treatment of liver trauma have improved in the past two decades. This article is a review of the literature and presentation of a case of massive liver injury, treated by right hepatic resection.

### HISTORICAL

In 1870, Bruns<sup>1</sup> treated a gunshot wound of the liver by debridement. By 1902, Finkelstein<sup>2</sup> collected reports of 21 patients with blunt hepatic trauma who had survived laparotomy. Madding<sup>3</sup> reviewed 829 cases of liver injury which occurred during World War II, and concluded all suspected liver injuries should be explored and devitalized tissue removed and adequate drainage established. He condemned the use of the gauze pack for control of hemorrhage and as a drain. Hellstrom<sup>4</sup> reported 300 cases of non-penetrating injuries to the liver with a mortality rate of 38%. Mikesky<sup>5</sup> et al, concluded after review of 300 consecutive cases of liver injury, that further progress depended upon refinements in the technique of hepatic debridement as prerequisites to the control of hepatic hemorrhage.

Resection of lobes of the liver for tumor have been reported on numerous occasions, (Quattlebaum,<sup>6</sup> Pack,<sup>7</sup> Wangensteen<sup>8</sup>). Emergency left hepatic lobectomy for trauma was performed by Quattlebaum in 1960, and a similar case reported in 1961, by Byrd and McAfee.<sup>9</sup> The technique followed was that advocated by Quattlebaum for elective resection for tumor. Both patients survived.

### ANATOMY

The liver is the largest and heaviest organ in the body, and comprises about 1/50 of the body weight in an adult.<sup>10</sup> (i.e., a 150 lb. man has a liver of about 3 lbs.). Recent anatomic dissections by Goldsmith and Woodburne,<sup>11</sup> and Wayson and Foster<sup>12</sup> have shown the true functional

division of the liver occurs at a plane from the gallbladder foss anteriorly, to the inferior vena cava, posteriorly. The falciform ligament is to the left of this plane. The branching of the portal vein and the other hollow systems determine the segmental divisions of the liver. The right lobe is divided into anterior and posterior segments, the left lobe into medial and lateral segments. The hepatic veins do not follow this lobar distribution, and may be variable. In most instances, there are three hepatic veins: a right, a middle, a left. The middle vein lies in plane between the right and left lobes, and drains one-third of the liver substance. At times, numerous smaller veins may be found during a dissection. Hepatic resection must be planned to leave as little liver bereft of nourishment or drainage as possible.

### CASE REPORT

A. O. N.: This eleven year old girl was admitted to Jefferson Memorial Hospital, Pine Bluff, Arkansas, on September 16, 1967, a few minutes after being thrown from the cab of a pickup truck when it was struck by another vehicle. She was in shock and complained of severe abdominal pain. The blood pressure ranged from 60/0 to 90/60 during emergency resuscitation using Dextran and two units of blood. Positive physical findings were marked tenderness in the right upper quadrant and progressive distention of the abdomen. A catheterized urine showed streaks of bright red blood. Portable x-rays of the chest and abdomen were negative for fractures. A pre-operative diagnosis of intra-abdominal bleeding due to ruptured viscus (liver, spleen, or kidney) was made. Patient was taken to surgery, and after movement to the operating table, she complained of severe pain, became quite dyspneic, and the blood pressure fell to 0/0. Anesthesia was started immediately, and after drap-

\* 1111 Cherry, Pine Bluff, Arkansas 71601.

## MASSIVE RESECTION OF THE LIVER FOLLOWING BLUNT TRAUMA

ing, the abdomen was opened rapidly through a right para-median incision. Approximately 2,000 cc. of dark blood and clots were present in the peritoneal cavity. The anesthetist reported no pulse, however, the aorta was found to be pulsatile, but quite soft and collapsible. Rapid exploration revealed a fracture of the right lobe of the liver, beginning at the dome near the inferior vena cava, extending down into the right lobe, but not involving the visceral surface. Lap packs were inserted into this area and pressure applied. A cut-down was done on the left cephalic vein, and a unit of blood was infused rapidly through each arm. The blood pressure rose to 80 mm. Hg., and the exploration was continued. The incision was extended through the eighth intercostal space into the right chest. The fracture of the liver was seen to extend into the right lobe, just to the right of the gallbladder fossa. It was decided resection of this portion of the liver was mandatory. This was carried out using blunt dissection with a hemostat. The hepatic radicals were isolated, clamped and ligated with 3-0 silk stick ties. The inferior vena cava was found to have a three cm. tear in the lateral side at the site of entry of the right hepatic vein. This was grasped with a Satinsky Clamp, and the cava was closed with a continuous 5-0 arterial silk suture. Next, the right branch of the portal vein was ligated in the liver substance and divided. The remainder of the specimen was resected bluntly, as described above. The common duct was explored and found to contain fresh blood clots.

These were removed, and a T-tube inserted. The liver edge was inspected again and no bleeding was noted. A strip of oxidized regenerated cellulose (Surgicel) was placed on the liver and the greater omentum brought up to cover the raw liver surface. A penrose drain and the T-tube were brought out through a stab wound in the right upper quadrant. A No. 28 French catheter was brought out of the chest and connected to waterseal drainage. The diaphragm was closed with interrupted 2-0 silk suture, and the abdomen closed in layers. Retention sutures of No. 2 Mersilene were used. At the end of the procedure, the patient had received a total of 4500 cc. of blood, and her B.P. was 90/40.

### PATHOLOGY REPORT

"This specimen consists of the right lobe of the liver with several smaller fragments, representing trimmings having a combined weight of 1.4 lbs.

The capsule of the liver is macerated, as is the entire parenchymal substance of the liver, which is macerated and torn, with massive hemorrhage into traumatic areas. Grossly, this is judged to represent a traumatic injury to the liver. Representative sections are processed. Diagnosis: Traumatic injury of the liver, characterized by laceration of the capsule and necrosis and maceration of the parenchymal cells."

A. D. T.

### COURSE

A hemoglobin and hematocrit immediately post-operative was 10.5 Gm. and 30%, respectively. An additional unit of blood was given one hour after surgery. No further transfusion was required until September 21, 1967. Close observation of her vital signs and hourly urine outputs were kept for 96 hours. A constant infusion of electrolyte and glucose solutions were carried out for five days. Laboratory results are listed in Table I. The blood sugar never fell below 90 mgm.%. The serum albumin did fall to 2.6 Gm.% on September 21, but responded to infusion of one unit of plasma and 50 Gm. of serum albumin. Total bilirubin was elevated to 2.4 mgm.% on September 18, 1967, but fell to 1.6 mgm.% by September 21.

LIVER SCAN, September 26, 1967:

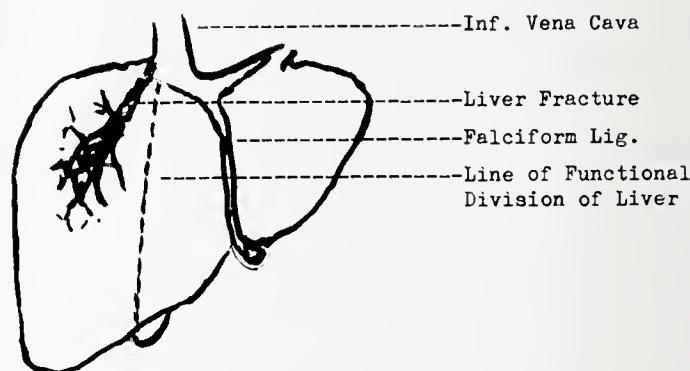


Diagram showing extent of liver injury.

"The outline of the liver was mostly to the patient's left. It shows that part of the right lobe is missing. There are no negative filling defects in the remaining portion of the liver."

The patient was febrile until October 8, 1967. Medications consisted of 15 to 20 million units of aqueous penicillin, two grams of Chloromycetin intravenously, and 20 mgm. Mephylon intramuscularly daily. Respirations remained rapid at a rate of 40-52/min., and oxygen therapy with high humidity was required for ten days, post-operatively. Intermittent positive pressure breathing

with Alevaire was given four times daily. By the twelfth p.o. day, the patient was sitting up and became ambulatory. A clear liquid diet was started on the fifth p.o. day, and she was encouraged to suck hard candy. The T-tube began draining by the third p.o. day and put out 250-300 bile daily. It was clamped on September 29, 1967. Only minimal drainage had occurred from around this drain. By October 10, 1967, patient was taking a full diet and medications were discontinued, except for Poly-Vi-Sol Liquid. Her weight had fallen from 115 lbs. to 110½ lbs. She was discharged home on the twenty-fourth post-operative day. One week later, her T-tube was removed in the office. She was re-admitted on November 16, 1967, and complete re-evaluation was done, including a repeat liver scan. She was asymptomatic, her wounds were well healed and liver profile closely approached normal. All lab data reported in Table I. Radiologic interpretation of the scan showed:

#### PROGRESS LIVER SCAN, November 17, 1967

"Done in both frontal and lateral planes, again reveal a large amount of the liver lying on the patient's left. We again have evidence that all or part of the right lobe of the liver is missing. We have no evidence of filling defects within the

remainder of the liver and no other abnormality is apparent."

#### SUMMARY

A case of emergency right hepatic resection following blunt trauma is reported. Massive injury to the liver, confined to one lobe should be treated by resection. Wide exposure and careful dissection of the hepatic veins is advised. Post-operative management may require several weeks of intensive care and frequent monitoring of vital signs, blood glucose, and serum proteins. Usual measures to maintain a clear respiratory system are mandatory.

#### ACKNOWLEDGEMENTS:

The author wishes to express thanks to Drs. George Roberson, U. S. Reed, and Mary Jenkins and to Mrs. M. Mitchell for their help in the management of this case.

#### BIBLIOGRAPHY

- Sparkman, R. S., and Foglemon, M.: "Wounds of the Liver," Annals Surg. 138:690-718, 1954.
- Finkelstein cited by Mikesky.
- Madding, Gordon F.: "Injuries of the Liver," Arch. Surg. 70, 748-756, 1955.
- Hellstrom, G.: "Closed Injuries of the Liver," Acta Chir. Scandinav. 122:490, 1961.
- Mikesky, Walter E., Howard, John M., and DeBakey, Michael E.: "Injuries of the Liver in 300 Consecutive Patients," Surg. Gyn. and Obst. 323, 1956.
- Quattlebaum, J. K.: "Massive Resection of the Liver,"

TABLE I

Date	Hb	Hmt	WBC	SEGS	FBS	BUN	BIL/RUB	ALB.	GLOB	NA	K	Cl.	CO <sub>2</sub>	URINE	SGOT	ALB	PLASMA AND BLOOD
9/16	9.4	29%															9 units blood
9/17	10.5	30%				136		3.1	2.1								
9/17	11.3	33%															
9/18	11.6	36	14,554	70%		9	2.4			132	5.4	90	24				
9/21	9.7	30	14,887	70%	90	4	1.6	2.6	2.2								1 unit plasma 1 unit blood
9/22																	50 Gm.
9/23										140	3.7	100	25.5				
9/24	13	40	19,203														
9/25					103	7		3.4	3.5	138	3.5	104	20				
9/27	11.3	35%	13,944	78%			3.02								OCC. RBC		
10/9	12.8	42	8,184	66%			.85	3.0	4.3	140.5	4.1	101	24				
<b>2ND ADMISSION</b>																	
11/16	12.8	40	8,826					3.7	3.7					25		3+	

- Ann. Surg. 137:787, 1952.
- Pack, George T., Miller, T. R., and Brasfield, R. D.: "Total Right Hepatic Lobectomy for Cancer of the Gallbladder." Ann. Surg. 142:6, 1955.
- Wangensteen, O. H.: "Primary Resection of Rectal Ampulla for Malignancy With Preservation of Sphincteric function together with further account of primary resection of the colon and rectosigmoid and note on Excision of Hepatic Metastasis." Surg. Gynec. & Obst. 81:1, 1945.
- Byrd, Wm. M., and McAfee, David K., Surg., Gynec. & Obstet. 113:103, 1961.
- Thorek, Phillip, Anatomy in Surgery, 2nd ed., J. B. Lippincott Co., 1951, p. 481.
- Goldsmith, N. A., and Woodburne, R. T.: "The Surg. Anatomy Pertaining To Liver Resection," Surg. Gynec. & Obstet. 105:310, 1957.
- Wayson, Edward E., and Foster, James H.: "Surgical Anatomy of the Liver," S. C. N. A. 44 No. 5:1263. 1964.



### Action of Thyroid Hormones and Cerebral Development

L. Sokoloff (NIMH, Bethesda, Md.) *Amer J. Dis Child* 114:498-506 (Nov.) 1967

The thyroid hormone has profound effects on the growth, development, and maturation of the nervous system. Infantile hypothyroidism results in retardation, not only of bodily growth but also of mental development. Thyroidectomy at birth results in a paucity of axodendritic connections, primarily in the neuropil. The perikarya are small in size and more densely packed, and axons and dendrites in the inter-perikaryonal space are reduced in amount. Associated with these morphological changes are concomitant disturbances in the development of electrical and behavioral activities. The electroencephalograms of neo-

natally thyroidectomized rats remain low in amplitude, and the appearance of evoked responses is delayed. These defects are completely or partially reversible, provided thyroid replacement therapy is begun before the critical postnatal age. In contrast, thyroidectomy after 24 days of age results in negligible morphological effects and completely reversible abnormalities in electrical and behavioral functions.

### Length of Psychotherapy in University Community Psychiatric Clinic

P. Errera et al (34 Park St, New Haven, Conn) *Arch Gen Psychiat* 17:454-458 (Oct) 1967

Psychiatric outpatients seen six to ten times were compared to patients seen more than 21 times in terms of rate of improvement as well as diagnostic, social, and demographic characteristics. The therapists' weekly progress notes were reviewed according to an elaborate rating scale to determine whether the short-term patient was more likely to be in "supportive" psychotherapy and the long-term patient in "exploratory" psychotherapy. The two groups were found neither to be distinguishable in terms of the nature of the therapy carried out nor with respect to any of the other criteria studied. In a community psychiatric clinic, a diversity of patients is seen, whose varied pathology, interests, and motivations require a wide spectrum of possible psychotherapeutic interventions which defy simplistic reductions.

### CORRECTION

Refer to the article "The Use of Psychotropic Drugs in General Practice" (September 1967 issue) of the *Journal of the Arkansas Medical Society*. In the chart in which the various Iminodibenzyl derivatives are listed, Pertofrane and Norpramin which are generically the same drug have been listed somewhat differently. Actually they should have been listed in precisely the same fashion.

# Tests of Pituitary-Adrenal Function\*\*

James R. Givens, M.D.\*

## CONTROL OF PITUITARY-ADRENAL FUNCTION

During the past two decades there has been a progressive increase in the understanding of the functional interplay between the central nervous system, the pituitary gland, and the adrenal cortex in the human. The pituitary gland of the normal individual produces and releases adrenocorticotropin (ACTH) which stimulates the adrenal cortex to secrete hydrocortisone (cortisol). The level of circulating cortisol in turn influences the secretion rate of ACTH (fig. 2). An elevated blood level of cortisol depresses the release of ACTH and a low level of blood cortisol results in an increased secretion rate of ACTH.<sup>1</sup> This is termed the negative feedback control of ACTH release. There are other factors, however, other than the circulating level of cortisol controlling the release of ACTH from the pituitary gland of the normal individual. There is a diurnal rhythm in the release of ACTH which occurs independently of the level of circulating cortisol.<sup>2</sup> For example, patients with Addison's disease have a diurnal rhythm of plasma ACTH despite constant low levels of circulating cortisol.<sup>3</sup> It is now known that the diurnal rhythm of ACTH secretion is related to the sleep-wake schedule of an individual.<sup>4</sup> The plasma concentration of ACTH in normal people who work in the daytime and sleep at night is highest at 6 a.m. and lowest between 6 p.m. and midnight. This pattern is reversed in night workers. Thus, in addition to the level of circulating cortisol, the sleep-activity pattern influences the secretion of ACTH. A third factor affecting the release of ACTH is stress (emotional or physical). The increased release of ACTH associated with stress, such as major surgery, occurs independently of the level of circulating cortisol since it cannot be suppressed with extremely large doses of cortisol or cortisol-like steroids.<sup>2</sup> There are, then, three known factors controlling the release of ACTH in the normal individual: (1) the blood

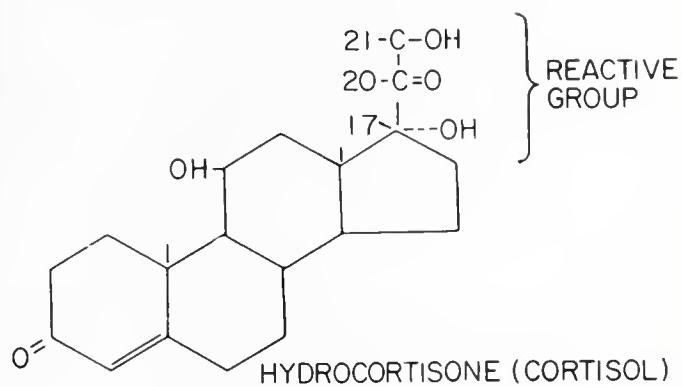


Figure 1  
The chemical structure of hydrocortisone (cortisol) showing the 17, 20, 21 dihydroxy-ketone group that reacts with phenylhydrazine in the 17-OHCS determination.

level of cortisol or cortisol-like steroids, (2) the sleep-activity pattern, and (3) stress. The last two factors undoubtedly represent controlling influences reaching the pituitary gland from the central nervous system. There is also data to suggest that even the negative feedback control of ACTH release from the pituitary gland is mediated through the central nervous system.

The amount of ACTH secreted by the pituitary gland is altered in those pathological conditions characterized by the overproduction or the underproduction of cortisol (fig. 2). The primary pathology of each of these two states may reside at the central nervous system-pituitary level or primarily in the adrenal cortex. It is, therefore, not sufficient to simply make a diagnosis of hypercortisolism or hypocortisolism. The physician must determine at which location the pathology resides in these two conditions. Knowing more precisely the etiology of hypercortisolism or hypocortisolism permits a more intelligent therapeutic approach. In addition, the workup may suggest other endocrinopathies. For example, if the etiology of hypocortisolism is found to be hypopituitarism, it is essential to evaluate the functional status of the other trophic hormones of the pituitary gland.

It is the purpose of this communication to briefly review the pituitary (ACTH)-adrenal cortex (cortisol) relationship in the various causes of the overproduction and underproduction of cortisol and to describe three manipulative testing procedures that are useful in the differential diagnosis of these states. The effects of the testing procedures on the level of plasma and urine

\* Assistant Professor of Medicine, Assistant Program Director, Clinical Research Center, The University of Tennessee, Memphis, Tennessee.

\*\* Delivered at the 19th Annual Meeting of the Arkansas Academy of General Practice, October 6, 1966, Little Rock, Arkansas.

\*\*\* Supported by National Institutes of Health, U.S. Public Health Service grants AM-10312 and GCRC FR-211-03.

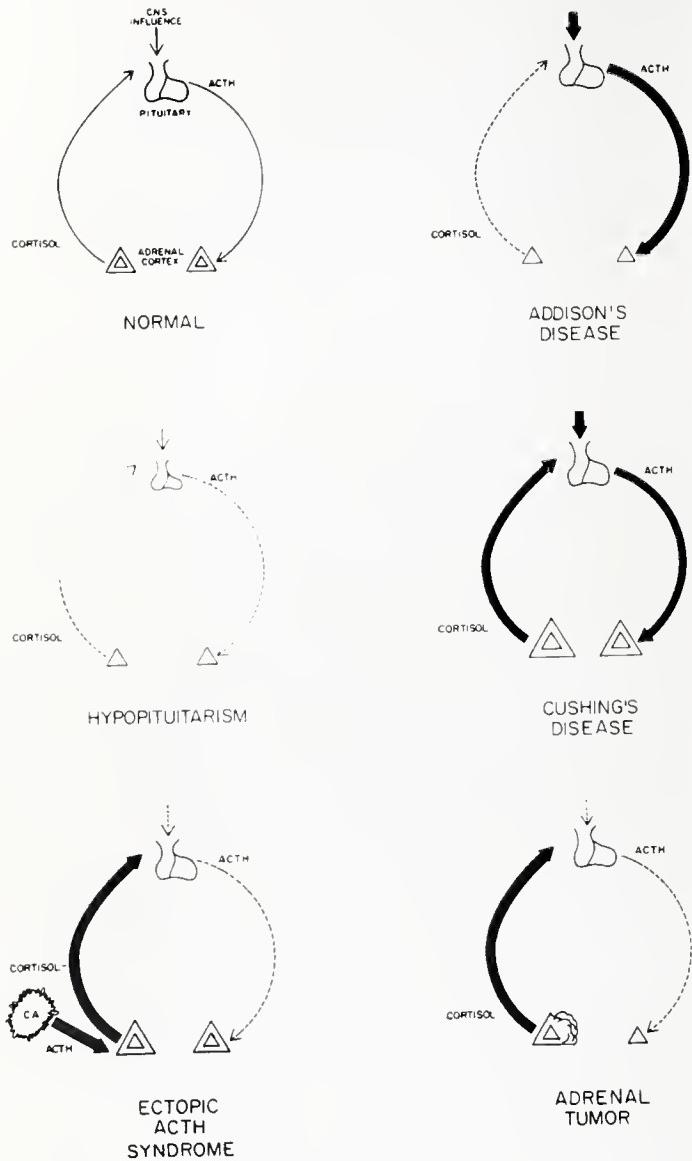


Figure 2

A schematic representation of the central nervous system-pituitary-adrenal cortex relationships in the normal individual and in the various causes of hypocortisolism and hypercortisolism. The variation in the width of the arrows representing cortisol and ACTH reflect quantitative differences in the blood concentration of these hormones.

17-hydroxycorticosteroids permit the physician to determine whether the primary pathology is at the central nervous system-pituitary level or in the adrenal cortex.

#### THE 17-HYDROXYCORTICOSTEROID (17-OHCS) DETERMINATION

Ideally, a complete study of the pituitary-adrenal system includes the simultaneous measurement of the plasma concentrations of ACTH and cortisol. However, the assay of plasma ACTH is quite difficult and, therefore, remains a research procedure available in only a few medical centers. The level of cortisol in the blood and its metabolites in the urine can be determined chemically by means of the 17-hydroxycorticosteroid (17-OHCS) determination.<sup>5</sup> The 17-

OHCS determination is based on the chemical reaction of a phenylhydrazine reagent with the dihydroxy-ketone moiety present on the 17, 20, 21 carbon atoms of the steroid nucleus (fig. 1). The chemical complex resulting from the reaction of phenylhydrazine and this moiety of a steroid nucleus produces a yellow chromogen. The intensity of the yellow color is measured in a colorimeter, or in a spectrophotometer, and is a rectilinear function of the amount of 17, 20, 21 dihydroxy-ketone steroid present in the reaction.

The major adrenocortical steroid that produces a yellow chromogen with phenylhydrazine is cortisol. In addition, tetrahydrocortisol (THF) and tetrahydrocortisone (THE), two urinary metabolites of cortisol, also react with phenylhydrazine. The plasma 17-hydroxycorticosteroids (17-OHCS) measures predominantly cortisol; the urine 17-OHCS measures predominantly THE and THF.

There are a number of drugs (particularly phenothiazine-type tranquilizers) that interfere with the 17-OHCS test because they form colored products in the acid media used in the test. If possible, patients should not receive any medication for several days prior to the determination of 17-OHCS in either their plasma or urine. If this is impossible, the physician should check with the laboratory performing the test to be sure that the drug(s) the patient is receiving does not interfere with the 17-OHCS test.

The plasma 17-OHCS determination can usually be performed on the plasma from approximately 15 milliliters of blood. The normal plasma 17-OHCS range from 12 to 24 $\mu$ g/100 ml. at 6 a.m. and from 6 to 12 $\mu$ g/100 ml. at 6 p.m. Because of the diurnal variation in plasma 17-OHCS concentrations, it is important to document the time of day the blood specimen is drawn. The urine 17-OHCS determination is performed on an aliquot (usually 10 ml.) of a complete 24-hour collection of urine. A urine creatinine determination is useful in evaluating the completeness of a 24-hour urine collection. Normal individuals excrete from 2-12 mg/day of 17-OHCS. Since the 24-hour excretion rate of 17-OHCS is roughly related to total body mass, a 250 pound individual normally excretes more 17-OHCS in 24 hours than a 100 pound person. Weight reduction results in a decrease in urinary 17-OHCS.

The 17-OHCS determination is performed in

the chemistry laboratory of larger hospitals, and is also available to all practitioners through commercial laboratories which supply appropriate containers for mailing specimens.

### MANIPULATIVE TESTING PROCEDURES

#### 1. The Dexamethasone Suppression Test

The administration of slightly supraphysiologic amounts of cortisol (or other glucocorticoids) to a normal person suppresses the secretion of ACTH and reduces the secretion rate of cortisol by the adrenal cortex. This physiologic phenomena is the result of the negative feed-back interplay between ACTH release and the circulating level of cortisol. The dexamethasone suppression test is based on the ability of glucocorticoids to suppress the release of ACTH from the pituitary gland.<sup>6</sup> Dexamethasone, a synthetic analog of cortisol, is approximately thirty times more potent than cortisol in suppressing the release of ACTH, and therefore, can be administered in an amount that will suppress the activity of the pituitary-adrenal system and not contribute significantly to the amount of the 17-OHCS present in the urine.

	DEXAMETHASONE 0.5 mg q 6h x 8	DEXAMETHASONE 2.0 mg q 6h x 8	METOPIRONE 500 mg q 4hr x 7	ACTH
NORMAL	↓	↓	↓	↓
CUSHING'S DISEASE	→	↑	↑	↑
ADRENAL ADENOMA	→	→	→ or ↓	→ ↓
ADRENAL CARCINOMA	→	→	→ or ↓	→
ECTOPIC ACTH SYNDROME	→	→	→ or ↓	→

Figure 3

The responses of the 24 hour urine 17-OHCS to the various pituitary-adrenal testing procedures in the normal individual and in the various causes of hypercortisolism. The arrows point downward when the urine 17-OHCS are decreased and upward when they are increased. A horizontal arrow indicates no change.

When a normal individual is given dexamethasone (0.5 m. orally every 6 hours for 2 days), the urine 17-OHCS are depressed to below 2-3 mg./24 hours; and the plasma 17-OHCS are usually less than 5 $\mu$ g/100 ml. at 8 a.m. (fig. 3).<sup>6</sup> This dose of dexamethasone is used to differentiate the normal person from individuals suffering from any of the causes of hypercortisolism.

Hypercortisolism that is pituitary ACTH dependent (Cushing's disease) can be differentiated from the other causes of hypercortisolism by the partial suppression of the 17-OHCS in the former condition with the administration of 8 mg/day of dexamethasone for 2 days.<sup>6</sup>

#### 2. The Metopirone Test

The biosynthesis of cortisol by the adrenal cortex requires the successive hydroxylation by appropriate enzymes of the 17, 21, and 11 positions of progesterone. Metopirone<sup>®</sup> (Ciba) is a pharmacologic blocking agent of 11- $\beta$  hydroxylase enzyme activity in the adrenal cortex. Metopirone administration, therefore, results in a partial blockade of 11- $\beta$  hydroxylase activity of the adrenal cortex, and tends to reduce the amount of cortisol synthesized. However, this in turn stimulates the pituitary gland to release more ACTH by way of the negative feedback control of ACTH release. The partial pharmacologic blockade is functionally compensated by the resulting elevation of the plasma level of ACTH. In the process of compensation there is an increase in the secretion rate of 11-deoxycortisol (compound S), which is the steroid in the biosynthetic pathway just before the 11- $\beta$  hydroxylase block. The result is an increased amount of the metabolite of compound S in the urine with Metopirone administration, and it is measurable as a 17-OHCS. Therefore, when a normal individual receives Metopirone orally in the dose of 500-750 mg. every 4 hours for 7 doses, there is a two- to five-fold increase in the amount of 17-OHCS (predominantly compound S) appearing in the urine on the day following the administration of the medication (fig. 3).<sup>7</sup> There is some increase in the urinary 17-OHCS on the day of Metopirone administration, but the major increase occurs on the day after the drug is administered because of the delay in the excretion of the metabolite of compound S in the urine. In order for there to be a normal response to Metopirone, an individual must have a functioning pituitary gland and adrenal cortex. There is no increase in the urinary 17-OHCS in Addison's disease or in hypopituitarism that includes a defect in ACTH production. An ACTH stimulation test is indicated to rule out Addison's disease when there is no increase in the urine 17-OHCS with Metopirone administration. The Metopirone test is useful in measuring the pituitary reserve of ACTH, provided the adrenal cortex is functional, since the basis of the test is a compensatory increase in the amount of ACTH released from the pituitary gland. The increase in the urine 17-OHCS is used as an indirect measurement of the increased rate of ACTH secretion.

### 3. ACTH Stimulation

The functional reserve of the adrenal cortex is evaluated by administering 50 units of aqueous ACTH intravenously over an 8 hour period and measuring the increase of the 17-OHCS in the plasma and/or urine. There is a three- to five-fold increase in the amount of 17-OHCS excreted in the urine on the day the ACTH is given to the normal individual (fig. 3). If an individual fails to respond to one 8 hour infusion of aqueous ACTH, 40-80 units of zinc or ACTH gel can be administered intramuscularly on several successive days to determine if there is an increase in the urine and plasma 17-OHCS (fig. 4).

#### DIFFERENTIAL WORKUP OF HYPERCORTISOLISM Cushing's Disease

The basic physiologic defect in Cushing's disease is an aberrant control of the release of ACTH, and the primary pathology in this condition resides at the central nervous system-pituitary level (fig. 2). First, patients with this disorder lack a normal diurnal rhythm in the secretion of ACTH and consequently of cortisol.<sup>8</sup> The 6 a.m. plasma ACTH levels may, or may not, be elevated. However, the 6 p.m. plasma ACTH levels are elevated due to the absence of a normal diurnal rhythm, and the sustained stimulation around-the-clock by ACTH results in adrenocortical hyperplasia. The second cardinal feature of Cushing's disease is a relative resistance of the pituitary release of ACTH to glucocorticoid suppression.<sup>6</sup> When dexamethasone is given to patients with Cushing's disease in an oral dose of 0.5 mg. every 6 hours for two days, there is little or no suppression of the plasma or urinary 17-OHCS (fig. 3). As previously indicated, this dosage of dexamethasone adequately suppresses the plasma and urine 17-OHCS of normal individuals. The oral administration of 2 mg. of dexamethasone every 6 hours for two days does result in a significant depression (about 50%) of the urine and plasma 17-OHCS in Cushing's disease (fig. 3). The ability to suppress the output of 17-OHCS in the urine of patients with Cushing's disease with the high dose (8 mg/day) of dexamethasone is indicative that the hypercortisolism in this condition is ACTH dependent.<sup>6</sup> This test is, therefore, useful in differentiating hypercortisolism that is pituitary ACTH dependent (Cushing's disease) from those that are the result of the autonomous production of cortisol

which is not pituitary ACTH dependent (adrenocortical tumors and ectopic sources of ACTH).

Since the pituitary and the adrenal cortex are functionally intact in Cushing's disease (fig. 2), the urine and plasma 17-OHCS of patients with this disorder increase with Metopirone administration (fig. 3). In addition, the 17-OHCS are markedly increased with the administration of ACTH because of the adrenocortical hyperplasia (fig. 3).<sup>9</sup>

#### Adrenocortical Tumors

The excessive production of cortisol by either an adrenal adenoma or carcinoma is usually autonomous and not primarily under the control of the secretion of ACTH from the pituitary gland (fig. 2). As a matter of fact, the secretion of pituitary ACTH is suppressed in these patients due to the high circulating level of cortisol

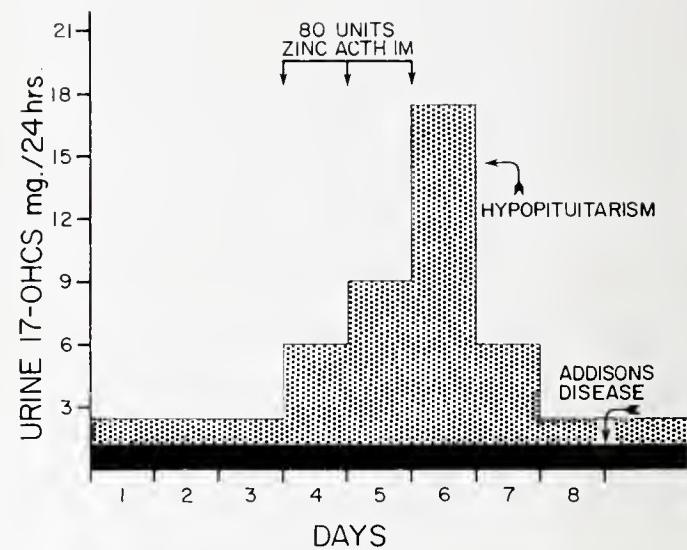


Figure 4  
A diagrammatic representation of the differential workup of hypocortisolism.

(fig. 2). Therefore, the urine and plasma 17-OHCS of patients with cortisol producing adrenocortical tumors are not suppressible with either dosage schedules of dexamethasone because the excessive production of cortisol is not ACTH dependent (fig. 3).<sup>6</sup>

Since the pituitary ACTH releasing mechanism is suppressed in these patients, the urine and plasma 17-OHCS do not increase in a normal fashion with the administration of Metopirone (fig. 3). When an individual has a cortisol producing tumor that is secreting the hormone at a maximal rate, there is no further increase in the 17-OHCS with ACTH administration (fig. 3).<sup>9</sup>

### The Ectopic ACTH Syndrome

Cushing's syndrome (hypercortisolism) is at times associated with certain non-endocrine tumors, particularly oat cell carcinoma of the lung. It is now well established that when this occurs, the tumor by producing and secreting large amounts of ACTH stimulates the adrenal cortex to secrete an excessive quantity of cortisol (fig. 2).<sup>10</sup> The secretion of ACTH by these tumors is not affected by glucocorticoid administration and, therefore, the urinary and plasma 17-OHCS of these patients are not significantly lowered with either dosage schedule of dexamethasone (fig. 3).

Because of the high circulating levels of cortisol, the pituitary releasing mechanism for ACTH is suppressed in these patients (fig. 2) and the 17-OHCS, therefore, do not increase in a normal fashion with Metopirone administration. If the tumor is producing a large quantity of ACTH and the adrenal cortex is maximally stimulated, there is no increase in the plasma and urine 17-OHCS with ACTH administration (fig. 3).

### DIFFERENTIAL WORKUP OF HYPOCORTISOLISM

A suboptimal production rate of cortisol is either the result of primary adrenal pathology (Addison's disease) or secondary to pituitary insufficiency (hypopituitarism). Patients that have primary adrenal insufficiency fail to have an increase in the urine or plasma 17-OHCS with either the intravenous administration of ACTH, or to a several day program of intramuscular injections of zinc ACTH or ACTH in gel (fig. 4). They also, of course, do not have an increase in the plasma or urine 17-OHCS with Metopirone administration.<sup>6</sup> The plasma and urine 17-OHCS of patients with hypopituitarism associated with a deficient ACTH releasing mechanism do not respond to Metopirone, but do respond to the administration of ACTH.<sup>7</sup> However, patients with hypopituitarism frequently do not have a normal increase in the plasma and urine 17-OHCS with a single 8 hour infusion of aqueous ACTH, but do show a normal increase with repeated daily injections of zinc ACTH or other long-acting ACTH preparations (fig. 4).

### SUMMARY

The normal physiologic relationships between the central nervous system, the pituitary gland, and the adrenal cortex are discussed. Three known factors controlling the release of ACTH are: (1) sleep-activity patterns which influence

the diurnal rhythm of ACTH release, (2) cortisol (or cortisol-like steroids) blood levels which influence ACTH release through a negative feedback control system, and (3) stress, either emotional or physical. Three manipulative procedures are described which are useful in the differential workup of hypercortisolism and hypocortisolism. They are: (1) the dexamethasone suppression test, (2) the Metopirone test, and (3) the ACTH stimulation test.

It is absolutely essential to accurately determine the cause of hypercortisolism and hypocortisolism because of the implications of therapy. The physician must determine where the primary pathology resides in each of these conditions. If the primary disorder in hypercortisolism is the aberrant control of ACTH release from the pituitary gland (Cushing's disease), the therapeutic approach should first be pituitary irradiation,<sup>9</sup> and if this fails, the patient should have a total bilateral adrenalectomy. However, if the differential workup of hypercortisolism indicates an adrenal tumor, then a unilateral adrenalectomy should be done. If the differential workup of hypocortisolism indicates primary adrenal pathology (Addison's disease), then both cortisol and a mineralocorticoid are needed in the treatment program. If the cause of hypocortisolism is found to be hypopituitarism, a mineralocorticoid is not needed in treatment since the aldosterone mechanism remains intact in this condition. Thus, a critical evaluation of the cause of the overproduction or underproduction of cortisol permits a more intelligent understanding of a patient's condition and allows an appropriate therapeutic program.

---

The valuable secretarial assistance of Miss B. Barr is gratefully acknowledged.

### REFERENCES

- Nelson, D. H.: Corticotropin in Human Plasma. In Astwood, E. B., ed.: Clinical Endocrinology, I. Grune & Stratton, New York, 1960, pp. 626-636.
- Ney, R. L., Shimizu, N., Nicholson, W. E., Island, D. P., and Liddle, G. W.: Correlation of Plasma ACTH Concentration with Adrenocortical Response in Normal Human Subjects, Surgical Patients, and Patients with Cushing's Disease. *Journal of Clinical Investigation* 42:1669, 1963.
- Graber, A. L., Givens, J. R., Nicholson, W. E., Island, D. P., and Liddle, G. W.: Persistence of Diurnal Rhythmicity in Plasma ACTH Concentrations in Cortisol-Deficient Patients. *Journal of Clinical Endocrinology* 25:804, 1965.
- Liddle, G. W.: Analysis of Circadian Rhythms in Hu-

## TEST OF PITUITARY-ADRENAL FUNCTION

- man Adrenocortical Secretory Activity. *Archives of Internal Medicine* 117:739, 1966.
5. Silber, R. H., and Porter, C. C.: The Determination of 17, 21-dihydroxy-20-ketosteroids. *Journal of Biological Chemistry* 185:201, 1950.
  6. Liddle, G. W.: Tests of Pituitary-Adrenal Suppressibility in the Diagnosis of Cushing's Syndrome. *Journal of Clinical Endocrinology* 20:1539, 1960.
  7. Liddle, G. W., Estep, H. L., Kendall, J. W., Jr., Williams, W. C., Jr., and Townes, A. W.: Clinical Application of a New Test of Pituitary Reserve. *Journal of Clinical Endocrinology* 19:875, 1959.
  8. Givens, J. R., Ney, R. L., Nicholson, W. E., Graber, A. L., and Liddle, G. W.: The Absence of a Normal Diurnal Variation of Plasma ACTH in Cushing's Disease. *Clinical Research* 12:267, 1964.
  9. Jailer, J. W.: The Basic Aetiology of Cushing's Syndrome. In Currie, A. R., Symington, T., and Grant, J. K., eds.: *The Human Adrenal Cortex*. The Williams and Wilkins Company, Baltimore, 1962, pp. 424-431.
  10. Liddle, G. W., Givens, J. R., Nicholson, W. E., and Island, D. P.: The Ectopic ACTH Syndrome. *Cancer Research* 25:1057, 1965.



### Clinical Stages of Breast Cancer

J. E. Devitt (Ottawa Civic Hosp, Ottawa) *Canadian Med Assoc J* 97:1257-1262 (Nov 18) 1967

A consecutive series of 1,440 breast cancer patients has been retrospectively reviewed with reference to factors related to the presenting clinical stage of the tumors. The known time existence prior to presentation for treatment did not correlate with either the presenting clinical stage or the survival rates of these stages. In spite of earlier presentation for treatment over the period of 16 years, the distribution of patients in the different clinical stages was unchanged. The crude survival rates and annual death rates suggest that the different clinical stages contain biologically different tumors. The higher incidence of skin recurrences, their earlier occurrence, and the poorer subsequent survival rates of patients with the more advanced clinical stages, also indicate a biological difference between the tumors of the different stages. It is desirable that methods of therapy associated with the least treatment-induced suffering be employed.

### Radioimmunoassay for Determining Plasma-Levels of Angiotensin II in Man

G. W. Boyd, J. Landon, and W. S. Peart (W. S. Peart, St Mary's Hosp, London) *Lancet* 2:1002-1004 (Nov 11) 1967

A radioimmunoassay for determining plasma levels of angiotensin II in man has been developed using antibodies raised against free angiotensin II. The test can detect 30 picogram amounts of angiotensin II, and is not influenced significantly by angiotensin I. The plasma levels found were, in general, lower than those reported by other workers for a similar test, and ranged from less than 8 to 56 picograms/ml in 12 healthy volunteers. Evidence to support the validity of the assay when applied to circulation angiotensin II has been derived from data obtained during its constant intravenous infusion into controls. Plasma concentrations of the peptide fell rapidly after discontinuation of the infusion with a calculated half-life of less than two minutes.



STUDIES FROM  
THE UNIVERSITY OF ARKANSAS MEDICAL CENTER  
THE DEPARTMENT OF

## OBSTETRICS AND GYNECOLOGY

WILLIS E. BROWN, M.D., Professor and Chairman

STACY R. STEPHENS, M.D., EDITOR

# ARRHENOBlastoma OF THE OVARY:<sup>\*</sup> A REVIEW OF THE LITERATURE AND REPORT OF TWO CASES

Jack W. Harrison, M.D.<sup>\*\*</sup>

One of the lesser known lesions of the female pelvis is a fascinating tumor of the ovary, the arrhenoblastoma. This tumor is fascinating because of its dramatic clinical manifestations, its biochemical vagaries, and its nebulous histogenesis.

This study is a review of the literature and a report of two cases from our own hospital. It is presented not so much as an effort to cast light in uncertain areas, but rather as an effort to gain close acquaintance with a somewhat exotic stranger.

### HISTORICAL BACKGROUND

The first report of arrhenoblastoma is credited to Ludwig Pick, who, in 1905 described a bilogically inert, well-differentiated, ovarian tumor which he called an "adenoma tubulare testiculare ovarii." In 1931, Meyer reported a study of these tumors and is credited with two major contributions: He gave the tumor its name, using the Greek word for male (*arrhenos*); and he established the system of classification of tumor types which still enjoys the greatest popularity.

The first case reported in the United States was in 1932 by Taylor, Wolfemann, and Krock of Fort Smith, Arkansas.<sup>28</sup> Their patient was an eighteen year old white female who developed a recurrence and expired 17 months after her initial surgery.

### *Histogenesis*

Most authors from Meyer to the present, have made an effort to explain the histogenesis of

arrhenoblastoma. In order to understand these theories, one must first be familiar with the embryology of the ovary. It is important to recall, first of all, that every young embryo has the potentiality to develop either a male or female reproductive system. In the early developmental period, the gonads are indifferent. The ovary (or testis) develops as a thickening of the urogenital ridge. This ridge gives rise to all the hormonally active portions of the gonads, including granulosa, Sertoli, theca, Leydig, and ovarian cortical stromal cells. From this mass of multipotential cells differentiation into male or female gonads gradually evolves. Examination of the various theories of histogenesis of arrhenoblastoma revolve around the variety of cellular elements in the tumor. Popoff, Klawans, Zell, Curtis<sup>26</sup> and others believed in a teratomatous origin, because of the profusion of cell types. Teilum supported the theory that arrhenoblastoma arose from a testicular blastoma (androblastoma) in the ovary. O'Hern and Neubecker<sup>24</sup> believed the arrhenoblastoma to simply represent an anomaly of differentiation within the potential range of gonadal embryonic tissue development. It would appear that the theory of O'Hern and Neubecker is the most logical, for it eliminates the necessity for explaining the presence of a teratoma or a testicular blastoma in the ovary.

### *Anatomy*

There appears to be no correlation between the size of an arrhenoblastoma and its biological or

\* From the University of Arkansas Medical Center, Department of Obstetrics and Gynecology, Little Rock, Arkansas.

\*\* 10009 Ronald Dr., Little Rock, Arkansas 72205.

malignant status. Functioning tumors of a few centimeters have been reported, and benign tumors of awesome size have been detailed.<sup>6</sup> Novak and Long<sup>22</sup> found that 50 per cent of 111 cases were less than 10 cm. in diameter. The largest tumor thus far reported measured 28 cm. and weighed 4,640 gm.<sup>6</sup> The majority of tumors seem to be between 6 and 10 cm. in diameter. There is no uniformity in the appearance of these tumors; though usually solid, they may be solid, cystic, or a combination. They may be soft or quite firm. On cut section their color ranges from white through pink, orange, yellow, and brown. No aspect of the gross appearance is helpful in determining hormonal activity. The tumor may be presumed malignant if the capsule is penetrated or if there is local extension.

The best reference point for a discussion of the microscopic appearance of arrhenoblastoma is the classification of Robert Meyer:

Type I—This is the most highly differentiated form, being composed essentially of tubular elements lined by Sertoli cells. Leydig cells may or may not be found between the tubules. This type probably represents the "adenoma tubulare" of Pick.

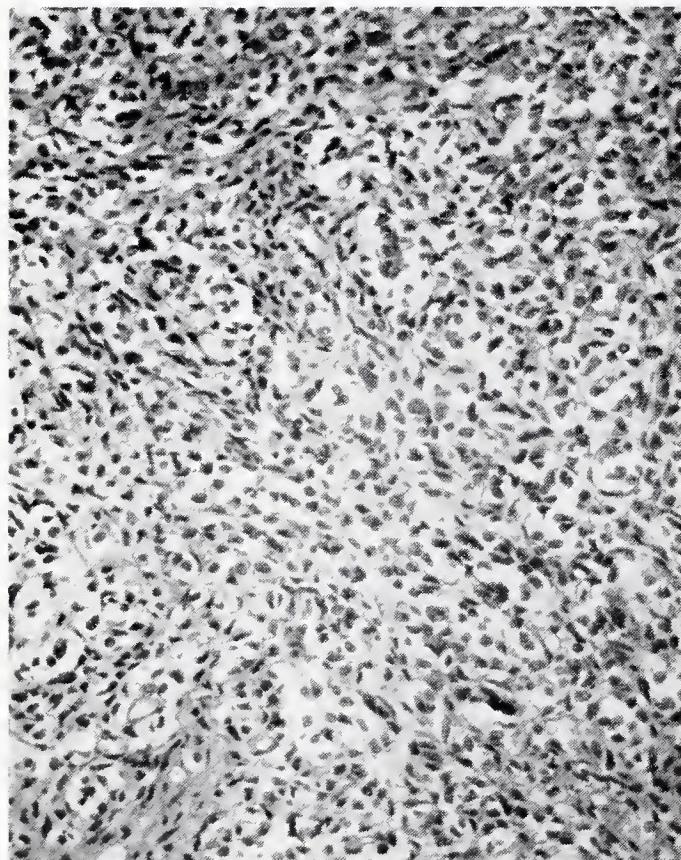


FIGURE 1

Case 1—Intermediate type Arrhenoblastoma; some tubule formation present (X200).

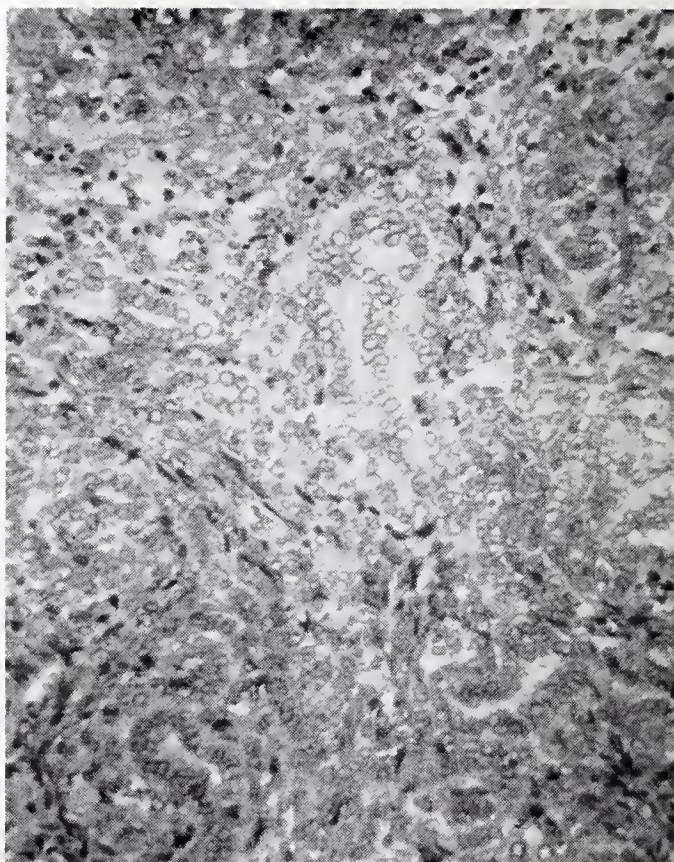


FIGURE 11

CASE 2—Intermediate type Arrhenoblastoma; Well formed tubules present (X200).

Type II or Intermediate type—Sertoli and Leydig cell elements may assume a wide variety of patterns, including pseudo-tubules, true tubules, nests, sheets, and cords. A variety of mesenchymal elements may be present.

Type III—This is the most undifferentiated form, with the Sertoli-Leydig cells giving the appearance of an embryonic sarcoma or carcinosarcoma.

Upon cursory glance, it would appear that Type I tumors should be masculinizing and Type III should be malignant. Although a majority of cases of virilization are associated with Type I tumors, most authors<sup>22, 24, 26</sup> state that the histologic pattern cannot be correlated with the clinical picture. This same statement is applied to attempts to diagnose malignancy from histologic appearance. Nor does the confusion about this tumor cease with biologic effect and malignancy. Often it is extremely difficult to say that the tumor is an arrhenoblastoma at all. Sandberg and Jackson<sup>27</sup> state that it is often impossible to distinguish histologically luteinized theca cell, ovarian hilum cell, and adrenocortical cell tumors. Many arrhenoblastomas have been reclassified as granulosa cell tumors by other pathologists. Novak and

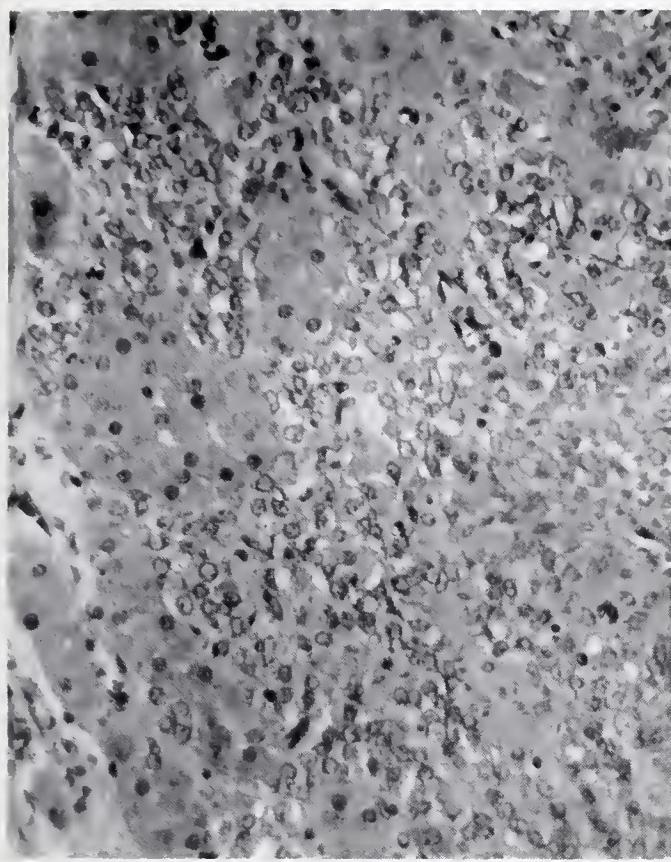


FIGURE III  
CASE 2—Clumps Of Interstitial Cells In Tumor (X200).

Long<sup>22</sup> pointed up this problem when they mentioned that some tumors, when examined by five pathologists, were assigned five different diagnoses.

In their collection of twenty-two patients, Javent and Finn found a malignancy rate of 22 per cent.<sup>12</sup> Pedowitz and O'Brien reported 240 cases with a malignancy rate of 21.3 per cent.<sup>26</sup> Novak and Long found a malignancy rate of 24 per cent in 111 cases.<sup>22</sup> O'Hern and Neubecker found only a 3 percent malignancy rate in 31 cases<sup>24</sup> and attributed the apparent difference to ovarian adenocarcinomas misdiagnosed as arrhenoblastomas.

Virtually all authors stated that neither tumor size nor morphology was useful in correlating mortality. Microscopic evidence of lymphatic spread, perforation of the tumor capsule, direct extension, and peritoneal implants were the only indicators of malignancy. Evidence of tumor recurrence was also suggestive of malignancy.

#### Clinical Features

Arrhenoblastoma is a rare tumor, though probably not so rare as was once believed. Most authors report an incidence of about 1 per cent of all ovarian neoplasms. However, Novak and Long<sup>22</sup> believe the incidence to be higher, due

largely to incorrect diagnoses in the past.

Arrhenoblastomas are essentially tumors of young women, with highest incidence in the second, third and fourth decades of life. Both Pedowitz and O'Brien<sup>26</sup> and O'Hern and Neubecker<sup>24</sup> found the greatest incidence to be in the 30's. Age range, however, is great—from two and one-half to 78 years. Novak and Long<sup>22</sup> found that 66 percent of patients with arrhenoblastomas were under 30 years old, and 70 percent were under 40 years. There does not appear to be a racial predilection associated with this tumor. Several authors did not mention the race of their patients while in those reported, distribution was virtually identical for white and non-white patients.

The outstanding clinical feature of this tumor is its virilizing effect which is brought about by androgen secretion and inhibition of follicle-stimulating hormone. This is often a dramatic process which may be divided into two phases: defeminization and masculinization. These phases, however, are not necessarily separate or distinct, but may occur simultaneously. Features of defeminization are oligomenorrhea and amenorrhea, breast atrophy, and loss of female body contour. Masculinization is characterized by hirsutism with male hair distribution, deepening of the voice, acne, male musculature, and enlargement of the clitoris. Several authors report the simultaneous occurrence of amenorrhea and the appearance of hirsutism.<sup>2, 29, 5</sup>

TABLE I  
SUMMARY OF SYMPTOMATOLOGY  
Pedowitz and O'Brien<sup>26</sup>

Symptoms	
Asymptomatic	12
Hirsutism	183
Amenorrhea	163
Oligomenorrhea	14
Menorrhagia	8
Post-menopausal bleeding	6
Breast atrophy	79
Male voice	119
Enlarged clitoris	118
Abdominal pain	77
Abdominal mass	23
Menstrual aberration	32
Not stated	18

Table I taken from Pedowitz and O'Brien,<sup>26</sup> is a summary of symptomatology in the 240 cases they collected. It is again noted that symptoms

may run the gamut from defeminization to those of hyperestrogenism.

Although the functioning arrhenoblastoma is an androgen-producing tumor, pregnancy may occur in association with this lesion, perhaps because the tumor was inert at the time of conception or the level of androgen secreted was not sufficient to inhibit ovulation.<sup>26</sup> Ten pregnancies are known to have been associated with arrhenoblastoma.<sup>9</sup> Two resulted in abortion and two infants showed signs of masculinization. According to Jones,<sup>14</sup> pseudohermaphroditism is most likely to occur if the androgen production began early in the first trimester. There have been multiple reports of pregnancies subsequent to the removal of this tumor.<sup>9, 7</sup> This is not surprising since the majority of patients were in the child-bearing age, and a normal hormonal balance was usually restored after surgical excision.

#### *Diagnosis*

The diagnosis of arrhenoblastoma is arrived at usually by exclusion of the numerous common causes of virilization.

The approach to diagnosis in the hirsute or virilized female should include the following:

1) A careful history to include family history, the patient's past medical and obstetrical history, medications, and pattern of appearance of symptoms.

2) Physical examination to include thorough pelvic evaluation. The detection of unilateral or bilateral ovarian enlargement should in no respect abridge or alter the hormonal evaluation outlined below.

#### 3) Hormonal assays.

a) 17-Ketosteroids. Serial determinations of 17-Ketosteroids should be made to allow for diurnal variations, collection errors, or laboratory errors. It has been found that in arrhenoblastomas, 17-Ketosteroid levels may be normal or slightly increased, even in the presence of marked virilization. Pedowitz and O'Brien found 17-Ketosteroids elevated (above 20 mg./24 hrs) in 13 of 35 patients studied.<sup>26</sup> Novak and Long<sup>22</sup> found 17-Ketosteroid elevations in one-third of their patients. It is generally conceded that this test alone is not sufficient either to diagnose or rule out arrhenoblastoma. A marked rise in 17-Ketosteroids is suggestive of adrenal hyperplasia, adrenal tumor, or ectopic adrenal tissue in ovarian tumors.

b) Dexamethasone suppression. Another assay of value is a trial with cortisone or one of its

derivatives, one of which is dexamethasone. The test is performed as follows: Serial determination of 17-Ketosteroids are made. The patient is then given, in divided doses, 2 mg. of dexamethasone per day for 2 days. Twenty-four hour urine samples are collected on the third and fourth days for 17-Ketosteroid determination. If the 17-Ketosteroid level is suppressed by dexamethasone, it is suggestive of adrenocortical hyperplasia. Elevated 17-Ketosteroid levels of gonadal origin will not be suppressed, nor will elevations due to adrenocortical adenocarcinoma or tumors.

c) 17-Ketosteroid Fractionation. It has been suggested that since total 17-Ketosteroids were not routinely elevated as a result of virilizing ovarian tumors, fractionation of 17-Ketosteroids would reveal androgenicity of gonadal origin.<sup>26</sup> Gruber et al<sup>9</sup> state that this process only indicates that adrenal pathology probably does not exist. They conclude that since there is no characteristic laboratory endocrine picture, examination of urinary metabolites is generally of no value in pinpointing a diagnosis.

4) Since it is obvious that endocrine evaluation alone is not diagnostic of this tumor, other techniques must be utilized. X-ray studies of the sella turcica should be made to evaluate its size. Endometrial biopsy and vaginal smear should be taken to determine estrogen effect, though the presence of hyperestrinism in no wise rules out arrhenoblastoma. Intravenous pyelography and retroperitoneal air studies are often helpful in detecting adrenal cortical tumors. All hirsute patients should have a buccal smear stained for sex chromatin.

5) While all the above measures are helpful in diagnosis, exploratory laparotomy and biopsy are the only means of confirming the diagnosis. Again, the finding of an ovarian neoplasm should not prevent the surgeon from making a careful exploration of the adrenal glands to rule out gross enlargement or neoplasm.

#### *Treatment*

Surgical extirpation is the treatment of choice for arrhenoblastoma.<sup>9, 22, 26, 29</sup> In spite of the fact that it is or must be considered a low-grade malignancy, certain latitude is allowable in individualizing the extent of surgery. Should the patient be past the child-bearing age, either biologically or by choice, a total hysterectomy and bilateral salpingo-oophorectomy should be performed. If the patient be desirous of future child-bearing, most

authors agree that unilateral salpingo-oophorectomy is permissible. This plan applies only to unilateral, well encapsulated tumors. In those tumors which have penetrated the capsule, total hysterectomy and bilateral salpingo-oophorectomy as well as extirpation of all possible tumor mass should be done. Careful follow-up to detect symptoms of recurrence is essential. There is insufficient data in the literature upon which to base judgment on the efficacy of irradiation or chemotherapy, though neither seems to have played a major role in the treatment of this disease.

The regression of symptoms usually occurs as an initial re-feminization followed by gradual, though sometimes incomplete, demasculinization. It is felt that the longer masculine features have been present, the less the chances of complete regression. Frymire<sup>7</sup> feels that the residual and probably permanent voice change and clitoral hypertrophy are sustained by normal adrenal cortical androgens and thus are comparable to the retained voice quality and size of external genitalia in the adult male castrate.

#### CASE REPORTS

Case No. 1. M.M.P., a nulligravid 15 year old Negro female, was seen in September, 1948, with the chief complaint of amenorrhea of four months duration. Menarche was at age 12, with periods occurring every 28 days and lasting 4 days. Cessation of menses was abrupt. Her only other complaint at that time was "hoarseness" of one year's duration. Physical examination revealed a male escutcheon and clitoral hypertrophy of unstated degree. Sparse facial hair was noted. Bimanual pelvic examination revealed a globular mass, 10-12 cm. in diameter, in the right adnexa. The mass was soft and nontender. On November 18, 1948, exploratory laparotomy revealed an 8 cm. tumor of the right ovary. Palpation showed the kidneys and adrenal glands to contain no gross tumors. Right salpingo-oophorectomy and appendectomy were performed. Postoperative course was uneventful. The specimen consisted of an ovoid, smooth mass which measured 8 x 6 x 6 cm. External surface was smooth and glistening. The tumor was noted to have a jelly-like consistency. On cut section, the tumor showed a lobulated surface and contained several cysts, the largest measuring 0.5 cm. The cysts contained clear yellow fluid. The surface has a grayish-red color with irregularly distributed yellow splotches. No weight was mentioned.

Microscopic sections showed a semi-tubular arrangement of rather small cells with large, hyperchromic nuclei and scant protoplasm. A very scant fibrous stroma was present. There were discrete areas of polygonal cells with small nuclei and granular vacuolated protoplasm. There were other areas of rather large, intermediate type. Figure 1.

The patient resumed menses on 12/15/49. She reported an enlargement in breast size the first post-operative month. She had regular menses until November, 1950, when she became pregnant. This terminated in a spontaneous abortion. She has been seen at regular intervals in our outpatient clinic, and is now 34 years old, gravida 8, para 5, abortions 3. She was last seen in our clinic in June, 1965, and was doing well. No report of masculine features has been mentioned since 1952, when it was reported that there was no evidence of masculinization.

Case No. 2. M. F. J., an unmarried 20 year old white female, gravida 0, para 0, was seen in our clinic on January 4, 1965, with the chief complaint of amenorrhea. Menarche was at age 13, with regular menses every 28 days, lasting 5 days. In October, 1963, the patient developed oligomenorrhea, which lasted two months. She then noted amenorrhea from December, 1963, until July, 1964, when she had vaginal bleeding following a "Hormone shot" by her local physician. She had no subsequent menstrual periods. In October, 1963, she noted growth of facial and body hair. In July, 1964, she began shaving daily. She also noted a deepening of her voice simultaneously with the hirsutism. Family history was negative for similar phenomena.

Physical examination revealed a 20 year old female with hirsutism of the face, trunk, and extremities. The face was recently shaved. Breast development was felt to be normal as was the distribution of body fat. She was noted to have a deep, husky voice. External genitalia showed a male escutcheon and a clitoris which measured 3 cm. in length. No adnexal masses were palpated.

Hemogram, urinalysis, serum electrolytes, blood sugar,  $I^{131}$  uptake, IVP, chest and skull films were all within normal limits. Baseline 17-Ketosteroids were 32.5 mgm, 28.4 mgm and 26.3 mgm/24 hours. Suppression with Dexamethasone gave 17-Ketosteroid values of 24.5 mgm and 21.0 mgm/24 hours for the two days following administration. A gynogram revealed enlargement of

the right ovary. Vaginal smear showed 85% basal and parabasal cells. Papanicolaou smear showed no estrogen effect but was positive for sex chromatin.

On January 14, 1965, an exploratory laparotomy revealed a 4 cm. well encapsulated mass of the right ovary. The adrenal glands were noted to be normal. Right salpingo-oophorectomy and appendectomy were performed. The left ovary was biopsied, but no abnormality was noted. Post-operative course was uneventful.

#### *Pathology*

Grossly the right ovary measured 2 x 4 x 4 cm. The cut surface was reddish-brown with numerous areas of yellowish tissue. Microscopically, the normal ovarian tissue was replaced with tumor composed of moderately large polygonal cells with a dark nucleus. These cells showed definite tubule formation. Figure 2. A second cell type containing much eosinophilic cytoplasm, vesicular nucleus, and a prominent nucleolus was noted in clusters. Figure 3. Thick hyalinized bands of stroma were present.

#### *Follow-up*

The patient reported that she shaved for only two weeks after operation and noted a definite decrease in facial hair during the first postoperative month. On February 10, she had the onset of a normal menstrual period. One year after surgery, clitoral size was unchanged and facial hair, though still excessive, was felt to be further decreased. Her voice was still slightly husky.

#### **DISCUSSION**

In many respects, the arrhenoblastoma is an enigma, beginning with its incidence. Pedowitz and O'Brien reported a series of 240 cases.<sup>26</sup> O'Hern and Neubecken added 31 cases in 1962.<sup>24</sup> A survey of the literature yielded 29 additional reports. The two from our hospital bring the total to 302 cases. Novak and Long<sup>22</sup> reported 111 cases covering a period of many years. It is uncertain how many of these have been included in other series. The total number of proven cases is therefore open to serious question.

Another enigmatic aspect of the arrhenoblastoma is the widely variable clinical picture it may present. We have dwelt at length upon the masculinizing property of the biologically active tumor, but, to leave the impression that this is the only effect would be a great injustice to a delightfully complex tumor. We have scarcely mentioned that the tumor can be biologically inert, but a sur-

prising number are. As high as 15% have been found to have no endocrine activity. There does not appear to be any correlation between endocrine activity and histologic type, the number of interstitial cells, or the size of the tumor. The question which must occur at this point is "What serves to 'kick off' a gonadal-cell tumor which is biologically inert?" Kreines et al<sup>16</sup> proposed one possible solution when they induced an *in vivo* arrhenoblastoma to produce increased amounts of 17-Ketosteroid by the administration of human chorionic gonadotrophin. This would explain why inert or relatively inactive tumors may become active during pregnancy.

Another area for speculation is the discovery in a patient with arrhenoblastoma of menorrhagia, endometrial hyperplasia, and vaginal cornification — all suggestive of hyper-estrinism. These signs and symptoms may co-exist with those of virilization. Pedowitz and O'Brien<sup>26</sup> explain this paradox by speculating that the ovulatory hormone of the pituitary is more sensitive to the circulating androgens than follicle-stimulating hormone. Thus, while ovulation is suppressed, follicle stimulation continues and produces the picture described above. This explanation, while very simple, also seems very unlikely. It is hard to imagine that a level of androgen sufficient to produce virilization would not be sufficient to suppress estrogen production. O'Hern and Neubecken<sup>24</sup> base their speculation on the embryology of the ovary and adrenals. The tissues that normally produce steroid hormones are derived from the primitive mesenchyme of the urogenital ridge. Their cells are often morphologically similar, e.g. adrenal cortical cells, theca and granulosa lutein cells, and Leydig cells and their basic function is the production of steroid hormones. The specific hormones each cell type produces may be determined by only minor variation in their enzymatic composition. It is possible that such slight variations may occur in the cells of functional tumors, so that any hormone they produce may differ from that of the analogous normal tissue.

The last problem which will be presented for speculation is that of classification. Obviously, one must first make a diagnosis before one can classify a tumor. In the area of the so-called "functioning ovarian tumors" this is often extremely difficult or even impossible on the basis of histology alone. Novak and Long<sup>22</sup> state that even the most well-versed pathologist may find it impossi-

ble to distinguish between certain virilizing and feminizing tumors without an apparent clinical effect. Since they obviously must be called *something*, they suggest the classification of all indistinguishable tumors of this type as mesenchymal or gonadal stromal tumors, with qualification by the prefix masculinizing or feminizing. If such a classification is not generally accepted, it is very likely that generations of gynecologists and pathologists to come will be plagued by the enigmas of this fascinating tumor.

### SUMMARY

A discussion of the histogenesis, pathology, clinical features, diagnosis, and treatment of arrhenoblastoma has been presented. Review of current literature has produced over 300 cases of this tumor. An additional two cases treated at the University of Arkansas Medical Center are reported.

### BIBLIOGRAPHY

1. Belisle, G., and Roy, F.: Arrhenoblastoma of the Ovary, Postgrad. Med., 27:746-749, 1960.
2. Betson, J. R., Jr., Marshall, R. A., and Chiffelle, T. L.: Scleropolicystic (Stein-Leventhal) Ovary with an Arrhenoblastoma of the opposite Gonad, Amer. J. Obstet. & Gynec., 83:93-100, 1962.
3. Brooksbank, B. W. L.: Pathways of Biosynthesis and Metabolism of Steroid Hormones, Clin. Obstet. Gynec., 7:1120-1135, 1964.
4. Flynn, J. M.: Arrhenoblastoma with Cortical Stromal Hyperplasia (A Symposium), J. Kansas Med. Soc., 65: 172-7, 1964.
5. Foda, M. S., Youssef, A. F., and Shafeek, M. A.: Arrhenoblastoma Associated with Bilbargiasis, J. Obstet. Gynaec. Brit. Comm., 68:986-90, 1961.
6. Foster, D. G.: Arrhenoblastoma of the Ovary. Case Report and Review of the Literature, Amer. J. Obstet. Gynec., 83:87-92, 1962.
7. Frymire, L. J.: Arrhenoblastoma with Two Subsequent Pregnancies. Report of a Case, Obstet. & Gynec., 17:248-253, 1961.
8. Goldzieher, J. W.: Ovarian Dysfunction, Clin. Obstet. & Gynec., 7:1160-1177, 1964.
9. Gruber, E. A., O'Roarke, J. J., and Sturman, M.: Arrhenoblastoma of the Ovary. Case Report and Endocrine Evaluation, Amer. J. Obstet. Gynec., 81:773-8, 1961.
10. Greenblatt, R. B., and Mahesh, V.: Clinical Evaluation and Treatment of the Hirsute Female, Clin. Obstet. & Gynec., 7:1109-1119, 1964.
11. Iverson, L.: Masculinizing Tumors of the Ovary. A Clinopathologic Survey with Discussion of Histogenesis and Report of Three Cases, Surg., Gynec., & Obstet., 84:213, 1947.
12. Javert, C. T., and Finn, W. F.: Arrhenoblastoma. The Evidence of Malignancy and the Relationship to Pregnancy, to Sterility, and to Treatment, Cancer, 4:69, 1951.
13. Johnston, J. W., Kernode, J. R., and Saunders, C. L., Jr.: Arrhenoblastoma of the Right Ovary, Amer. J. Obstet. & Gynec., 78:800-3, 1959.
14. Jones, H. W.: Female Hermaphroditism Without Virilization, Obstet. Gynec. Survey, 12:433, 1957.
15. Kase, N., and Conrad, S.: Steroid Synthesis in Abnormal Ovaries, Amer. J. Obstet. & Gynec., 90:1251-1261, 1964.
16. Kreines, K. T., Garanis, J. C., and Esselborn, V. M.: Arrhenoblastoma of the Ovary, Surg., Gynec., & Obstet., 116:328-34, 1963.
17. Krock, F., and Wolfman, S. J.: Arrhenoblastoma of the Ovary, Amer. Surg., 114:78-89, 1941.
18. Lina, G. R. de: Arrhenoblastoma of the Right Ovary. Report of a Case, Obstet. & Gynec., 27:107-109, 1966.
19. Floyd, C. W.: Central Nervous System Factors in Hirsutism, Clin. Obstet. & Gynec., 7:1085-1091, 1964.
20. Meyer, J. H.: Arrhenoblastoma or Granulosa Cell Tumor? Report of a Case and Review of Literature, Virginia Med. Monthly, 89:651-4, 1962.
21. Morris, J. M., and Scully, R. E.: *Endocrine Pathology of the Ovary*, C. V. Mosby Co., St. Louis, 1958, pp. 82-95.
22. Novak, E. R., and Long, J. H.: Arrhenoblastoma of the Ovary, Amer. J. Obstet. & Gynec., 92:1082-93, 1965.
23. Novak, E. R.: Virilizing Tumors of the Ovary, J. Ark. Med. Soc., 57:313-8, 1961.
24. O'Hern, T. M., and Neubecker, R. D.: Arrhenoblastoma, Obstet. & Gynec., 19:758-70, 1962.
25. Okurn, L. E.: Bilateral Arrhenoblastoma of the Ovary. Report of a Case, Obstet.-Gynec., 25:448-50, 1965.
26. Pedowitz, P., and O'Brien, F. B.: Arrhenoblastoma of the Ovary. Review of the Literature and Report of 2 Cases, Obstet. & Gynec., 16:62-77, 1960.
27. Sandberg, E. C., and Jackson, J. R.: A Clinical Analysis of Ovarian Virilizing Tumors, American J. Surg., 105: 784-92, 1963.
28. Taylor, J. M., Wolfmann, S. J., and Krock, F.: Arrhenoblastoma of the Ovary, Surg., Gynec., & Obstet., 56:1040-1046, 1933.
29. Whelton, J. A.: Long-term Survival Following Conservative Surgery for Bilateral Arrhenoblastoma. Report of a Case, Obstet. & Gynec. 27:210-3, 1966.



## WHAT IS YOUR DIAGNOSIS?

*Prepared by the*  
*Department of Radiology, University of Arkansas*  
*School of Medicine, Little Rock*

**See Answer on Page 382**



**HISTORY:** This 51 year old female dwarf was referred for endocrinologic study. Her height was 48 inches. The patient had ceased growing at age eight. She was considered "normal", except for her short stature, until about four years prior to admission when her mental condition began to deteriorate, her voice became slow and hoarse, her hair became quite thin, menstruation ceased, and the patient lost about seventy pounds.



## ELECTROCARDIOGRAM

## OF THE MONTH

• • • • • • • • • • • • • • • • • • •

AGE: 19 SEX: M BUILD: Medium BLOOD PRESSURE: ?

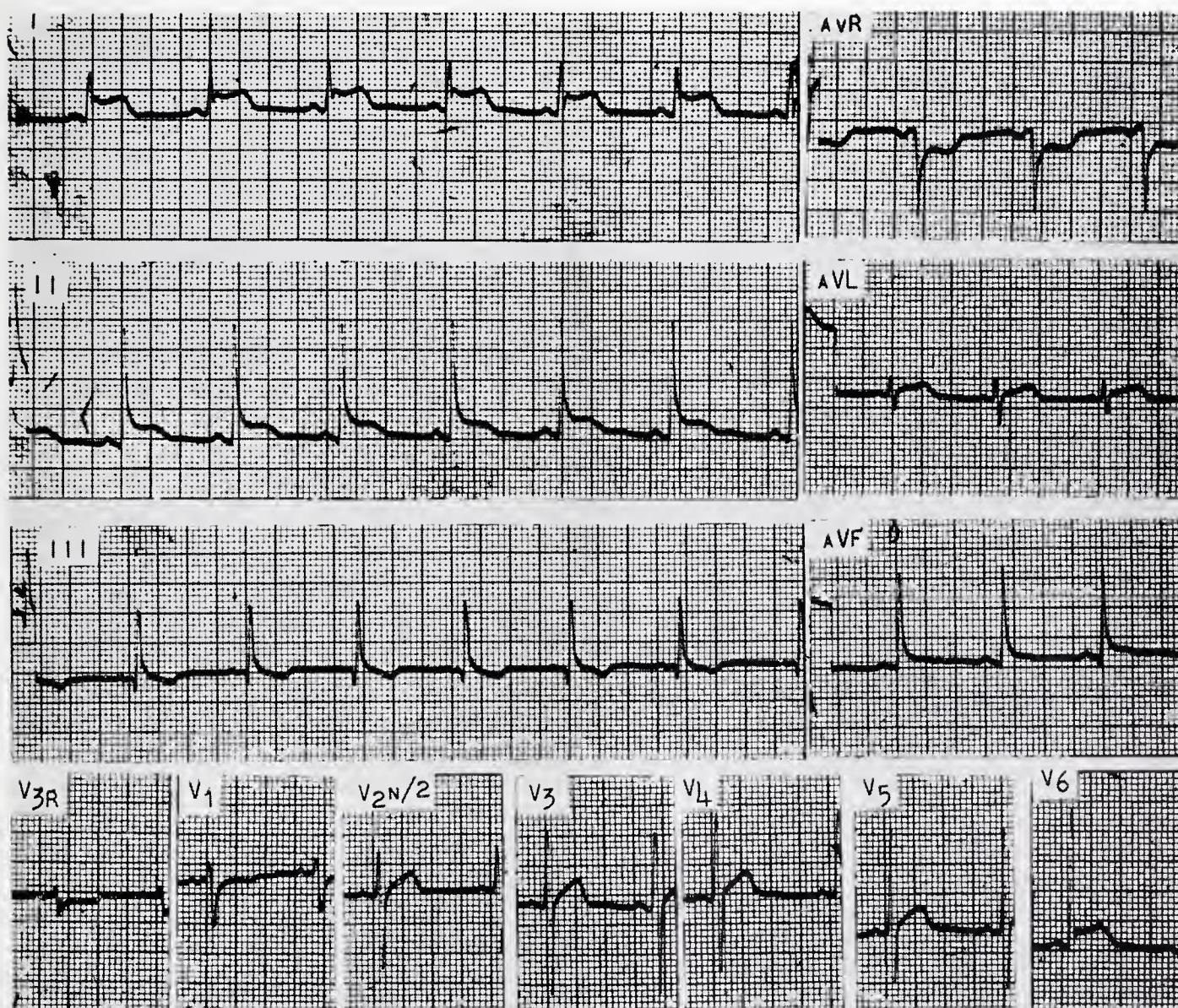
CARDIAC DIAGNOSIS: Pericarditis (?)

OTHER DIAGNOSES: Left Hemothorax

MEDICATION: None

HISTORY: Stab wound of chest

See Answer on Page 382



The Department of Medicine, University of Arkansas Medical Center  
James S. Taylor, M.D., Professor of Medicine



## Summary of the Arkansas State Board of Health Activities 1967

The abundance of American wealth creates public health problems faster than man's present efforts can prevent or correct. The Arkansas State Department of Health is acutely aware of the public health problems in Arkansas and is doing all possible to meet the challenge within the limitations imposed by a minimal budget and inadequate manpower.

In 1967 the State Health Department experienced many frustrations such as the fire which destroyed the serology and enteric bacteria units of the laboratory, and the discontinuing of the Medical Rejectee Health Referral Program by the federal government. We saw some divisions of the health department lose as high as thirty percent of their personnel to better salaried positions. Even with the above conditions prevailing, the State Health Department still carries out its responsibility.

The Bureau of Laboratories processed 159,929 specimens and conducted 271,654 tests and prepared 652,333 reports.

The Division of Communicable Disease Control processed reports reflecting 4,281 cases of reportable communicable diseases. For years, there has been no locally acquired malaria in Arkansas, but in 1966-67 nine (9) cases of foreign-acquired malaria, all in servicemen returning from a tour of duty in Southeast Asia, were reported. Eleven (11) new typhoid carriers were discovered during this fiscal year bringing the total to 221 since the inception of the typhoid carrier register, November 4, 1938.

Dramatic reduction in cases of diphtheria has followed the utilization of diphtheria toxoid as an active immunizing agent. Only one case of diphtheria was reported this fiscal year, which was the lowest in history.

Strides in venereal disease control efforts in

Arkansas have resulted in a decrease from the 321 early syphilis cases in fiscal year 1965 to the 182 cases experienced in fiscal year 1967. This represents a decrease in reported incidence of 43.3%.

The purpose of the Arkansas Venereal Disease Project is to continue the rate of reduction through the use of proven techniques in finding new and undetected cases of early syphilis from known diagnosed infections. To insure that all possible early infectious cases will receive contact follow-up, efforts will continue to encourage active participation in the control effort by private physicians and laboratories. The operation of a venereal disease clinic at the University of Arkansas Medical School enhances the total physician participation program by providing a more complete background in syphilology to approximately 75 future physicians annually.

Several articles have appeared in the *Journal of the Arkansas Medical Society* reflecting the activities of the Division of Communicable Disease Control and the Division of Veterinary Public Health. The nature of these two divisions necessitates their working hand-in-hand in order to effectively carry out their respective programs.

The Division of Veterinary Public Health through its information media, *The Arkansas Animal Morbidity Report*, provides useful information monthly, relative to all types of animal diseases. During fiscal 1966-67, 110 cases of animal rabies were reported or diagnosed by the State Health Department. This and other information strongly indicates that rabies has become well established in many species of wildlife that are plentiful in Arkansas. Rabies in pet animals has not been excessive during this fiscal year because of successful rabies vaccination programs conducted annually. Wildlife species most fre-

quently involved in the spread of rabies are: skunks, foxes, and bats.

Health Mobilization Planning enjoyed a very productive year in Medical Self-Help Training, 32,242 individuals completing the course in 772 classes. Forty-four (44) classes were conducted in cardiopulmonary resuscitation, with 757 students in attendance.

The Emergency Medical Stockpile Program was revised and new agreements were reached with six (6) participating hospitals. Emergency health planning activities were underway and the draft of the Emergency Health Service Plan has been submitted to the U. S. Public Health Service for approval.

During the fiscal year 1966-67, the Division of Tuberculosis Control continued to provide local medical services to out-patients through chest clinics staffed by 37 qualified consultants. During the year, 771 chest clinics were held, with an attendance of 7,825. Of major importance during this fiscal year was the preparation for a pilot project to demonstrate the feasibility and effectiveness of managing tuberculosis patients in a general hospital, the Jefferson Hospital in Pine Bluff was chosen.

Public Health Nursing services carry the greater load of all services carried on by the health department. Some 53,000 individuals were admitted to nursing service and a total of 141,118 nursing visits were made to these persons by 170 public health nurses. In addition to the above activity, public health nurses completed 226,114 series of immunizations protecting people against typhoid, pertussis, tetanus, smallpox, and polio.

The Division of Chronic Disease assisted the Division of Nursing in implementing the Home Health Service Program. Of the 23,692 nursing visits made to patients with chronic illness, 16,515 were made in the patients' home.

The Engineering Division reviewed and approved plans for 323 public water works, 231 sewerage systems, and 43 swimming pools.

The Division of Plumbing progressed in all phases of the overall program. The inspection program reflected 890 inspections which revealed that the quality of sanitary plumbing throughout the State is improving considerably. This is due in part to some 78 schools conducted throughout the State for plumbers.

The Division of Food and Drug Control is charged with enforcing some 33 laws and regula-

tions. In an effort to protect the consuming public, sanitarians in the State made 2,816 inspections of establishments catering to the public.

The Fluid Milk Division provides inspection services to assure pure, unadulterated milk and milk products from farm to doorstep. To provide this assurance 5,280 samples of milk and milk products were taken necessitating 22,184 total tests be performed.

The Maternal and Child Health Division plays a major role in the health of children in Arkansas. Local physicians assisted by public health nurses conducted maternity clinics attended by 2,095 expectant mothers.

Public health nurses served 650 premature infants born in Arkansas last year. Approximately one percent of the infants born alive in the State last year were born prematurely.

Well-child supervision was provided for 5,238 children at well-child conferences in 31 counties. School age children receive much of the public health nursing service in the maternal and child health program; some 10,971 school age children received nursing consultation. Hearing tests were given to 77,545 children in 72 counties, and 118,533 vision tests were given in 74 counties. Hearing and vision testing is conducted by volunteer workers trained and supervised by hearing and vision consultants from the Maternal and Child Health Division.

The Hearing and Speech Center evaluated 420 children and admitted 90 for therapy sessions. The Mental Retardation project evaluated 277 children from all over the State.

A special project for premature infants was carried on in Jefferson County to determine the feasibility of early discharge of premature infants who have stabilized and are gaining weight. There were 828 premature live births admitted to this project and 584 subsequently were admitted to the home care part of the program. Public health nurses averaged 15 home visits per infant admitted to the home care part of the program.

Since November 1964, Family Planning Clinics have been added to maternity clinics, and initiated in certain areas without maternity clinics. At present there are 44 clinics in 45 counties. Three of these are Regional Family Planning Clinics serving more than one county. To date 2,625 patients have utilized the services of these clinics. Request forms for participation must be

signed by both husband and wife.

The Division of Hospitals and Nursing Homes licensed 132 hospitals and infirmaries and 191 nursing homes. The 191 nursing homes represent 11,052 beds. There were 47 projects active under the Hill-Burton program during the year. The Division of Hospitals and Nursing Homes, under the supervision of the State Health Officer, is responsible for the administration of the Hill-Burton program in Arkansas.

The Division of Hospitals and Nursing Homes is also responsible for the surveying and recommending of facilities for certification to the Social Security Administration for participation in the Health Insurance Care Program (Medicare). There are 153 facilities of all types certified under this program in Arkansas.

In looking ahead to developments in 1968, probably the most important is the anticipated completion and occupying of the new State Health Building located at West Markham and Monroe Streets. These new quarters will enable the State Health Department to serve the public more efficiently and to expand some existing programs and possibly initiate new programs. One such program is reactivating the Division of Safety in an effort to initiate programs of Emergency Medical Services so as to comply with the National Highway Safety Act of 1966. Plans are projected for a more active Division of Health Education. Also, we foresee increased demands on the new Meat Inspection Program, which was established in the Health Department.

#### RADIOLOGICAL HEALTH IN ARKANSAS\*

Unequivocally, the primary mission of the radiological health program is to prevent, if possible, or to reduce to acceptable risk levels biological effects due to ionizing radiation.

The need for radiation protection has been known since the discovery of x-rays and radium at the end of the last century. In our modern society, the widespread use of numerous applications of ionizing radiation and radioactive isotopes in the healing arts is expanding profusely. Likewise, industry and research is taking advantage of the rapid development in nuclear energy which further emphasizes the need for radiation protection and radiation safety. It is the responsibility of the State Department of Health to establish and maintain proper control to mini-

mize the exposure of the public to unnecessary radiation.

Radiation is just another of the hazards to which modern man is exposed. While it is a boon to mankind, its benefits must be weighed against the risks it imposes on civilization. If we are to reap the benefits from its use, there is need for understanding at all levels and, most important, it is essential that government officials and the public have a proper perspective of radiation hazards.

The greatest contribution from man-made sources to the population's radiation dose is from the use of x-rays for medical and dental purposes. It is recognized that the continual use of radiation for diagnosis and treatment is essential in medicine and dentistry; and the amount of exposure can be reduced by practical methods without diminishing the value of the needed diagnostic information. Our observations in the remedial phase of our radiological health programming reveal that radiation protection inspections and physical surveys of medical x-ray equipment and installations cannot entirely solve the problem of unnecessary radiation exposure even though acceptable equipment and devices are assured by our regulations. By way of introducing preventive measures as a substantial part of our program, we think an educational concept which would emphasize the importance of the operation of, in addition to the presently stressed condition of, medical x-ray equipment. Even though machines are in proper operating condition and under the professional supervision of physicians, they must be operated only by individuals adequately knowledge in safe operating procedures and competent in the safe use of this equipment. Likewise, in atomic energy activities, occupational radiation levels and exposure to the general public must be kept at minimum levels consistent with the philosophy of balancing benefits against risks involved.

Radiation standards provide an important basis for the control of radiation exposure in a radiation protection program. However, these standards must be under constant evaluation and the standards amended as necessary to keep them updated and current.

Specifically, the radiological health program encompasses three basic areas: Licensing activities, x-ray activities, and environmental surveillance activities.

\* By Mr. Frank Wilson, Division of Radiological Health.

### 1. Licensing and Regulation Activities

Byproduct, source and special nuclear material, naturally occurring and machine produced radioisotopes are licensed and regulated. As of July 1, 1967, the following licenses were in effect:

TABLE I

Type	Licenses	Licenses
Medical	48	42
College & University	14	7
Industrial	43	37
Federal & State (Civil Defense)	153	151
Total	258	237

Our inspection and enforcement data shows that we have 1.11 violations per license.

### 2. Medical X-Ray Registration and Control

Medical x-ray machines are required to be registered after acquisition and installation. This differs from our licensing program where a license must be acquired prior to possession of the radiation. The x-ray program data is as follows:

TABLE II

Number of Medical Registrants in State	529
Hospitals or Clinics	208
Private Practice, Medical	321
Number of Medical X-ray Tubes in State	973
Hospitals or Clinics	572
Private Practice	401
Average Number of Exposures per Week	
Private Practice	5,869
Hospitals	36,491
Clinics & Other	4,589
Total	46,949
Total Number Tubes Surveyed	731
Average Numbers Exposed per Tube per Week	62.7
Private Practice	25.6
Hospitals	73.8
Clinics & Other	39.4

TABLE III  
Occupationally Exposed

Medical X-Ray		
Hospitals	Based on Number of 595 Tubes Inspected	
Private Practice	Based on Number of 315 Tubes Inspected	
Clinics & Other	Based on Number of 181 Tubes Inspected	
Monitored		
Hospitals	450	75.6%
Private Practice	75	23.8%
Clinics	42	23.2%
Totals		
Occupationally Exposed	1,091	
Monitored	567	
Per Cent Monitored		51.9%
Dental		
Occupationally Exposed	839	
Licenses Inspected		
Occupationally Exposed	363	
Monitored	263	72.4%
Occupationally Exposed		Per Cent Monitored Monitored
Medical x-ray	1,091	567
Dental x-ray	839	
Licenses	363	263
Total	2,293	830 36.2%

### NUMBER OF MEDICAL X-RAY REGISTRANTS AND X-RAY TUBES IN STATE OF ARKANSAS, 1967



NOTE: Top number is number of registrants  
Bottom number is number of x-ray tubes.

### 3. Environmental Surveillance Activities

At present, the environmental surveillance program covers milk, potable water supplies, air, and off-site monitoring at the Southwest Experimental Fast Oxide Reactor site.

Ten milk sampling stations representing most of the milk consumed in Arkansas test milk monthly for radionuclide determinations. Potable water supplies are sampled once each three years. Three high volume air samplers are operated by the Division, two in Little Rock and one in Fayetteville. The Fayetteville sample station is in conjunction with the SEFOR reactor site monitoring program. A complete off-site monitoring program needs to be inaugurated as soon as the reactor starts up in late 1967 or early 1968. Additional off-site monitoring stations must be established during late spring of 1968 around the site of a proposed power reactor being built by Arkansas Power and Light Company. Environmental surveillance presents a variety of problems from money needs for equipment, personnel, sampling frequency, sample media, to new laboratory procedures. Sampling data for the year June 30, 1966 to July 1967 is as follows:

TABLE IV

A. Milk, gamma scans	100
B. Rain, gamma scans	31
C. Water, gross alpha and beta	203
D. Rain, gross alpha and beta	81
E. Air filter gross beta and gamma	818
Total	1,233



## EDITORIAL

# Physician Participation In Organized Medicine

Alfred Kahn, Jr., M.D.

**A**t a recent meeting of the American Medical Association Board of Trustees the problem of Physician Participation in Organized Medicine was brought up.

The Board endorsed the following report and resolution, approved by the Interspecialty Committee, which are intended to improve participation by physicians in organized medicine.

"The Committee believes that there has been a decline in the influence, prestige and effectiveness of the average local county medical society as a unit of medical organization. This situation has come about largely within the past two decades.

Probably the most easily documented proof of the foregoing statement can be found in the low and declining percentage of membership attendance at meetings of local groups. The failure to attend meetings on the part of members may well be due to many factors of varying weight.

Certainly one major contributory factor could be found to be the heavy demand on the average physician's time, created by required meetings related to hospital staff membership and privilege.

These demands have been accepted by the profession to an increasing degree, with very little question. Acceptance stems from a notion that these things are all 'requirements' of the Joint Commission on Accreditation of Hospitals and that there is really no choice. Moreover, in most hospital staff organizations, a minimum percentage of attendance as a condition of continuing privilege is required, usually no less than 50%. Local medical societies seldom, if ever, have an attendance requirement for membership.

The problem is compounded in some com-

munities where membership in more than one staff organization is desirable. Membership in a single staff organization is usually limited to those in either small communities with a single hospital or in very large communities where use of more than one hospital is either impractical or impossible. Some societies (notably Dade County in Florida) have improved attendance by arranging to hold required hospital meetings and society meetings concurrently. This practice is more prevalent in small communities, and meetings are usually held at the hospital in the smaller community.

The Committee understands that it is *not* a requirement of JCAH that meetings relating to hospital staff affairs be intramural; that JCAH has no interest in locale so long as the function is performed and satisfactorily recorded. Opposition to extramural meetings might be expected to come from hospital administration. Intramural meetings have some possibility of domination by non-medical individuals.

Programs other than those of JCAH, which are hospital-staff oriented, may have similar effects; specifically, teaching programs and programs for continuing education.

It goes without saying that a non-attending member of a local society contributes little or nothing but dues. He is not informed in society affairs; he contributes nothing to the solution of problems of the medical community and its relation to the public; most important, such a non-participant does not react responsibly in carrying out programs of organized medicine which have been determined to be in the best interests of all.

It would be in the interest of the public and medicine as a whole to improve physician par-

ticipation in democratic medical organizations on a community basis.

Whereas the Interspecialty Committee believes these things to be generally true, now therefore be it resolved that the Interspecialty Committee recommends to the Board of Trustees that effective mechanisms be found to encourage the development of plans to bring within the purview of the community medical society any and all meetings and programs requiring physician participation."



## RESOLUTIONS



Whereas, an all-wise Providence has called Doctor Cecil F. Boulden, Jr., from our midst, and

Whereas, Dr. Boulden was a capable and conscientious physician, dedicated to his profession and to the care of his patients, and

Whereas, he was an active participant in medical organizations, hospital staff activities and in civic affairs, and

Whereas, his passing leaves his medical colleagues, his patients and the community with the great loss of his friendliness, his professional ability and his organizational capacity,

Therefore, Be It Resolved, that the members of the Sebastian County Medical Society, in regular session of January 9th, 1968 formally record their sorrow by this resolution, and

Be It Therefore Further Resolved, that a copy of this resolution be spread on the Minutes of the Sebastian County Medical Society and that a copy be furnished the bereaved family and that it be published in the *Journal of the Arkansas Medical Society*.

## MEDICINE IN THE



# Group Practice By Medical School Faculty

A recently conducted survey<sup>1</sup> has examined the prevalence of school-wide formal group practice arrangements or plans by clinical faculties in U.S. medical schools. As of October 1967, 22 four-year schools out of 72 reporting indicated they had in operation a school-wide faculty group practice plan. Sixteen additional schools stated they were definitely planning to organize such a group.

Table 1 presents the number of schools participating in varying types of faculty practice plans.

Of the 22 schools reporting group practice plans in operation, 14 of the plans were organized as a

part of the medical school, while the remaining 8 were a separate organization of the faculty. However, the professional billing for physician fees was handled by only 2 of the medical school business offices, 14 were handled by a separate group practice business office, and in the remaining 6, the professional billing was handled by the hospital business office. Sixteen indicated employment of a full-time administrator or business manager for the group.

In the 22 schools it was found that there were 10 different arrangements for distribution of net professional earnings. However, many of the dif-

<sup>1</sup>Mr. Clyde Hardy, Associate Dean of Bowman Gray School of Medicine, developed and distributed this questionnaire.

**TABLE I**  
**FACULTY PRACTICE PLANS OF 72 FOUR-YEAR SCHOOLS OF MEDICINE, 1967**

Plans	No. of Private Schools	No. of Public Schools	Total	Per Cent
Schools that have a definite school-wide group practice plan	10	12	22	30.6
Schools that are planning to implement a group practice arrangement	8	8	16	22.2
Schools that have one or more departments with established plans, but have not extended into school-wide programs	3	3	6	8.3
Schools that have established plans just for medicare and medicaid patients	3	1	4	5.6
Schools that have a definite arrangement for "fee for service" income, but not a group practice as such	2	3	5	6.9
Schools without organized groups or firm plans	8	11	19	26.4
Total number of schools responding	34	38	72	100.0
Number of schools not responding	5	7	12	
Total number of schools queried	39	45	84	

ferences were minor; most income ended up as salary support. In addition to the support of the school implicit in the underwriting of clinical salaries, in one half of the 22 schools a portion of the income from practice ranging from 10 to 25 per cent is allocated to the overall programs of the school. Such sums are usually handled through some mechanism set up in the Dean's office. Sixteen of the 22 schools have an established income ceiling. At the same time, 17 have retained some form of financial incentive for private practice.

even more dramatic growth as a result of the extension of the principle of third party payments for the majority of patients being seen in the academic medical center.

#### THE MONTH IN WASHINGTON

Washington, D.C. — President Johnson signed into law the social security legislation which included changes in medicare and medicaid advocated by the medical profession.

It provides for a record high minimum 13 per cent increase in cash benefits for 24 million Americans, starting in March. Beginning April 1, one dollar a month of the increase will be withheld from the checks of those participating in voluntary Plan B of medicare which covers part of physician fees and other medical services other than hospitalization.

The total premium for Plan B insurance is now \$6 a month, half of which is paid by the federal government. Beginning April 1, the premium will be increased to \$8, with the government paying \$4 and the participant \$4.

According to HEW, about 20 cents of the \$1 increase was needed to cover costs which were originally underestimated. Another 25 cents would cover expected increase of use under the program. An anticipated 5 per cent increase in physician fees would account for another 25 cents, HEW said.

The social security taxable base also was in-

**TABLE 2**

	Number Established	Total in Operation
Group Practices in operation prior to 1945	4	4
Group Practices established 1945-1955	6	10
Group Practices established 1955-1960	3	13
Group Practices established 1960-1965	4	17
Group Practices established in the year 1967	5	22

The years in which group practice plans were established in U.S. medical schools are shown in Table 2. While these plans increased fourfold in the years 1945 to 1965, it is most interesting to note that 5 new group practice plans became operational in the year 1967. It is most likely that in the next several years the number of group practice plans may be expected to show

creased, effective January 1, from \$6,600 to \$7,800. The tax rate for this year will remain the same as under the old law, 4.4 per cent on both the employee and employer and 6.4 per cent on self employed. Tax rate increases are set for subsequent years through 1997.

Changes in medicare and medicaid include:

#### **MEDICARE**

—Payment of physician fees is authorized either to the patient on the basis of an itemized bill, either unpaid or receipted as paid, or to the physician under the assignment method.

—Payment is authorized for full reasonable charges for radiological or services furnished by physicians to hospital inpatients.

—Hospital outpatient diagnostic services are transferred from the hospital insurance program (Plan A) to the supplementary medical insurance program (Plan B). The change was designed to simplify the procedure for paying benefits for hospital outpatients.

—The requirement of physician certification of the medical necessity for admission to general hospitals and for hospital outpatient services was eliminated.

—Medicare beneficiaries are given a lifetime reserve of 60 additional days of hospital care after the 90 days covered in a spell of illness. The beneficiary must pay the first \$20 per day for the additional hospitalization.

—The Secretary of HEW was directed to study and report to Congress by January 1, 1969, the effects of covering drugs under medicare and of establishing quality and cost standards for drugs provided under social security health programs.

—Services of podiatrists are authorized under medicare to the extent that a state's law permits, but routine foot care is not covered.

—Outpatient services furnished by physical therapists are authorized within certain limitations.

—The Secretary of HEW was directed to study and make recommendations of adding services of chiropractic and optometrists to Plan B.

—Payment is authorized under Plan B for diagnostic x-rays taken in a patient's home or a nursing home.

#### **MEDICAID**

—States are limited in setting eligibility income levels for federal matching purposes.

—States are given until January 1, 1970, to buy-in medicare Plan B insurance for aged medicaid

beneficiaries.

—States are authorized to make direct payments to medicaid beneficiaries for physicians' and dentists' services if the beneficiary is not receiving cash assistance.

—States are permitted to select either the five basic health services, or seven out of the 14 authorized, for the medically indigent. The basic five must be provided for those receiving welfare cash benefits. The basic five are: inpatient hospital services, outpatient hospital services, other laboratory and x-ray services, skilled nursing home services and physicians' services.

—States must license administrators of nursing homes and set minimum nursing home standards if these institutions are to be eligible to participate in the medicaid program.

—States must establish methods and procedures to safeguard against unnecessary utilization of health care services and to assure that payments for such services and drugs do not exceed reasonable charges.

Under the program for Aid to Families with Dependent Children (AFDC), states now must offer birth control services to appropriate beneficiaries with acceptance on a voluntary basis. Authorizations for federal financial aid for maternal and child health programs are increased. Services of optometrists are added to child health programs.



Dr. James L. Goddard, commissioner of the Food and Drug Administration, estimated that about 300 drugs, marketed under 1,600 brand names, will be forced off the market because of ineffectiveness for treatment of medical conditions.

An evaluation of some 3,000 drugs placed on the market from 1938 to 1962 was started in June, 1966. It is being conducted by 29 panels of 200 medical and pharmaceutical specialists under the direction of the National Academy of Sciences-National Research Council. With the first panel reporting in January, the last report is due in mid-1969.

The FDA assigned the evaluation to the academy following passage of the Kefauver Drug Law in 1962. The law's main thrust was to give FDA power to pass on the efficacy as well as the safety of drugs marketed after 1962, but a provision authorized the government to review drugs already on the market.

The federal government has licensed a live, attenuated mumps virus vaccine especially recommended for adolescent and male adults who can become sterile from the relatively innocuous childhood disease.

The vaccine, developed over a five-year period by the Merck, Sharp and Dohme Research Laboratories, was not recommended for routine use in infants and young children pending development of more information in the duration of the immunity it provides.

Dr. William H. Stewart, U.S. Surgeon General, said excellent protection against naturally occurring mumps has been observed for the first year after the single-infection live vaccine.

"But limited data on natural exposure during the second year indicate continuing protection although additional observation will be required to determine the duration of immunity protection," he said.

## THINGS TO COME



The Scott and White Conference in Medicine and Surgery, Sixteenth Annual Meeting, will be held February 18, 19, and 20, 1968 at the Knights of Columbus Hall, 2218 West Avenue D, Temple, Texas. The guest speakers will be Lee E. Farr, M.D., Professor of Nuclear and Environmental Medicine, The University of Texas, M. D. Anderson Hospital and Tumor Clinic, Houston, Texas; George A. Hallenbeck, M.D., Professor of Surgery, Mayo Graduate School of Medicine, Mayo Clinic, Rochester, Minnesota, and Henry D. Janowitz, M.D., Chief, Department of Gastroenterology, The Mount Sinai Hospital, New York, New York. The after-dinner speaker will be Mr. George Gobel, Entertainer, Hollywood, California.

The Annual Postgraduate Course in Pediatrics will be held on March 8 and March 9, 1968, at the Scott and White Memorial Hospital, Temple, Texas. The guest speaker will be Dr. C. W.

Daeschner, Professor and Chairman, Department of Pediatrics, University of Texas-Medical Branch, Galveston, Texas.

### MEDICAL RESEARCH SEMINAR

#### Second Semester

##### Date

- |      |                                                                                                                                         |
|------|-----------------------------------------------------------------------------------------------------------------------------------------|
| 3-2  | Amphotericin B toxicity—A long-term follow-up of 53 patients<br>Dr. Raymond P. Miller                                                   |
| 3-9  | Production of truncus arteriosus in mongrel dogs<br>Dr. Raymond C. Read                                                                 |
| 3-16 | Current dermatologic investigations<br>Dr. Calvin J. Dillaha                                                                            |
| 3-23 | Anatomic-pathologic correlation of the electrocardiogram with specific heart chamber weight<br>Drs. LaDon W. Homer and James E. Doherty |
| 3-30 | Properties of liver phosphorylase<br>Dr. Laurence Bradham                                                                               |
| 4-6  | Phage studies on <i>Mycobacterium kansasii</i><br>Dr. Edwin Brosbe                                                                      |
| 4-13 | Studies on platelet transfusions<br>Dr. Arthur Haut                                                                                     |
| 4-20 | Inhibition of catalase in G-6-PD red blood cells<br>Dr. Eugene Taylor                                                                   |
| 4-27 | Preview—Papers accepted for Atlantic City meetings                                                                                      |
| 5-4  | Cancelled—Atlantic City meeting                                                                                                         |
| 5-11 | Review—Atlantic City papers                                                                                                             |
| 5-18 | Studies in search of repair of radiation injury<br>Dr. Glenn V. Dalrymple                                                               |
| 5-25 | Immunoassay techniques in gastroenterology<br>Dr. Kerrison Juniper, Jr.                                                                 |

The Research Seminar will not be held in June, July and August.



## PERSONAL AND NEWS ITEMS

### Fayetteville Doctor Has Article Published

Dr. Anthony T. DePalma of Fayetteville has an article in the November-December 1967 issue of the Journal of Rehabilitation (the official publication of the National Rehabilitation Association) entitled, "The Surgeon's Role in Crisis Therapy."

### Fort Smith Doctors Attend Assembly in Mexico

Dr. Arthur F. Hoge, Jr., Dr. Samuel E. Landrum, and Dr. Norman F. Westermann, all of Fort Smith, attended the ninth Western Medical Assembly of Mexico at Guadalajara, Mexico on November 21-25. Both Dr. Hoge and Dr. Landrum presented papers.

### Doctor Speaks at Rotary Luncheon

Dr. Frank Daniel of DeQueen spoke on "Obesity and Smoking as Health Hazards" at a Rotary luncheon in DeQueen.

### West Memphis Doctor Wins Award

Dr. Gilbert D. Jay, III, of West Memphis won the third place award for Boss-of-the-Year sponsored by the West Memphis Jaycees. The awards were given at a banquet.

### Dr. Baldridge Joins State Hospital Staff

Dr. H. K. Baldridge, formerly with the staff at Fort Roots VA Hospital, was appointed December 4 to the Benton State Hospital Staff as a psychiatrist.

### Harrison Doctors Clinic Burglarized

Thieves broke in and stole \$30.00 from the cash drawer at the reception desk of the Doctors Clinic in Harrison recently.

### New Clinic for Nashville

Dr. M. H. Wilmot has built a new clinic in Nashville. The two story building is 46' x 70' in dimension and will provide facilities for several physicians.

### Little Rock Doctor is Rotary Nominee

Dr. John McCollough Smith of Little Rock has been named district governor-nominee for District 615 of Rotary International for the year 1968-1969. There are 36 clubs in central and eastern Arkansas which are covered by his district. The election

will be held in May at the Rotary International Assembly at Lake Placid, New York.

### Mena Doctor Holds Open House

Dr. Calvin Austin held open house at his new office building in Mena on December 3.

### Fort Smith Doctor Receives Award

Dr. Thomas Raymond of Fort Smith was presented an award by the Arkansas Division of the American Cancer Society at the state meeting in Little Rock on November 30. The award was for his work during 1966 in the Lost Chord Club, an organization to teach people to speak following surgical removal of the larynx.

### Dr. Polk Honored for 40 Years Service

Dr. J. T. Polk of Keiser was honored on December 17th for his 40 years of service to people in Keiser and the surrounding area.

### Dr. LeBlanc Guest Speaker at Meeting

Dr. Joseph V. LeBlanc of Fort Smith was guest speaker at a meeting of the St. Boniface Home School Association. There was a film shown after the talk and then a panel discussion with Dr. LeBlanc and Dr. James M. Post participating.

### Dr. Saltzman Speaks at Chamber of Commerce Meeting

Dr. Ben Saltzman of Mountain Home gave a talk on "Public, Family and Industrial Medicine and First Aid" at a meeting of the Searcy Chamber of Commerce.

### Dr. Mathis Speaks at PTA Meeting

Dr. Edwin Mathis of Little Rock spoke at a meeting of the Crossett Parent-Teacher Association on the subject of the child with learning disabilities.

### Dr. Poole Elected to Medical Staff

Dr. G. D. Poole of Jonesboro was elected chief of staff at St. Bernard's Hospital in December. Dr. A. C. Modelevsky was elected vice chief of staff and Dr. H. W. Keisker is the new secretary.

### Dr. Dillaha Elected to Academy Board

Dr. Calvin J. Dillaha of Little Rock was elected a director of the American Academy of Dermatology at the annual meeting in Chicago.

**Thieves Strike Doctors' Offices**

Thieves broke into the offices of Dr. Hunter Sims and Dr. Herbert Jones in Blytheville and stole a safe containing an undetermined amount of money. The theft took place over the long New Year's holiday weekend.

**St. Vincent Announces New Officers**

Dr. A. A. Pringos of Little Rock is the new chief of staff at St. Vincent Hospital. Dr. James Morrison is vice chief and Dr. William L. Steele is the secretary of staff. Other department heads include Dr. K. M. Kreth, obstetrics and gynecology; Dr. James Cornett, general practice; Dr. Travis Wells, medicine; Dr. James R. Walt, surgery; Dr. A. J. Brizzolara, eye, ear, nose, and throat; and Dr. Edwin Mathis, pediatrics.

**Doctor Re-Elected to AAGP**

Dr. Charles G. Swingle of Marked Tree has been re-elected to active membership in the American Academy of General Practice.

**Dr. Saltzman Elected Director**

Dr. Ben N. Saltzman of Mountain Home was elected as a director of the Baxter County Society for Retarded Children. The purpose of the organization is to work for the benefit of retarded children as well as for all retarded people.

**Dr. Lanford Elected Chief of Staff**

Dr. H. G. Lanford of West Memphis was elected chief of staff at the Crittenden Memorial Hospital. He succeeds Dr. Chester W. Peebles. Dr. M. D. Deneke was elected vice chief of staff.

**"Dr. J. T. Polk Day" Held in Keiser**

Dr. J. T. Polk of Keiser was honored on December 17th for his 40 years of service to the community. He was made Mayor for the day. He was honored first at the Keiser Methodist Church by his pastor and friends and then at a reception in the Keiser school cafeteria where hundreds of friends attended. Among physicians of the area attending were Dr. L. D. Massey, Dr. Eldon Fairley, Dr. Julian Fairley, and Dr. Frank Rhodes of Osceola. Also present was Dr. Travis Crews of Little Rock. Dr. Polk was presented a check for \$1,000.00 and a silver tea set by the committee in charge.

**Dr. Saltzman Serves as Preceptor**

Dr. Ben N. Saltzman of Mountain Home served as a preceptor for John J. Vacanti, a medical student from Omaha, Nebraska.

**Paragould Gets New Doctor**

Dr. J. Larry Lawson moved from Walnut Ridge to practice surgery in Paragould.

**Doctor Added to Staff**

Dr. James L. Maupin of Dardanelle has been added to the Dardanelle Clinic Staff as a general practitioner.

**Doctor Attends Symposium**

Dr. James M. Stalker of Batesville attended a symposium on burns in Tulsa. The symposium was held on January 12 and 13.

**Dr. Bennett Named Chief of Staff**

Dr. Joe D. Bennett of Harrison is the new chief of staff of the Boone County Hospital Medical Staff. Dr. Joe Bill Wilson was elected vice chief of staff, and Dr. G. Allen Robinson is the secretary-treasurer. Dr. William A. Hudson is the outgoing chief of staff.

**Doctor Elected Member**

Dr. John V. Satterfield of Little Rock has been elected to membership in the Southern Thoracic Surgical Association and the American College of Surgeons.

**AMA Annual Committee Appointments**

Dr. Ben N. Saltzman of Mountain Home was reappointed as Chairman of the Council on Rural Health of the American Medical Association. Dr. Jack W. Kennedy of Arkadelphia was re-elected to the Committee on Medical Aspects of Sports and Dr. Joseph A. Norton was again selected for membership on the Physicians on the Committee on Medicine and Religion.

**Doctor Moves to Dardanelle**

Dr. James L. Maupin has moved to Dardanelle where he is associated with Dr. Gene D. Ring and Dr. Jerome Luker.

**Dr. Norton Speaks at Dedication**

Dr. Joseph A. Norton of Little Rock spoke at the dedication of the A. R. and Leta Smith Merritt Chapel which is located adjacent to the Jefferson Hospital in Pine Bluff.

**Dr. Johnson Appointed by Governor**

Dr. J. Albert Johnson of Jacksonville has been appointed by Governor Rockefeller to the state Merit System Council for a three year term.

**Article Honors Dr. John McCullough Smith**

An article in the January/February issue of the *PR DOCTOR*, a publication of the AMA, gives

recognition to Dr. John McCullough Smith of Little Rock for his services to the public and to various medical organizations and associations.

#### **Dr. Barron Resigns**

Dr. Edwin N. Barron, Jr., of Little Rock, resigned his position as physician for the state Penitentiary early in February.

#### **Dr. Calhoun Elected President**

Dr. Joseph D. Calhoun of Little Rock was elected President of the American College of Radiology at its annual meeting in Chicago in February.

#### **Symposium on Chest Diseases Held**

The third annual Symposium on Chest Diseases for South Arkansas physicians was held in February in El Dorado. Dr. Larkin M. Wilson of El Dorado was program chairman and presided over the meeting. Dr. Raymond Read of Little Rock presented discussions on various aspects of chest diseases.

#### **New Medical Director for Blue Cross-Blue Shield**

Dr. George K. Mitchell of Little Rock became the new medical director of Arkansas Blue Cross-Blue Shield on February 5. He was formerly with the Little Rock Diagnostic Clinic.

#### **Searcy Doctor Attends Seminar**

Dr. Thomas A. Formby of Searcy recently attended the 14th Annual General Practice Review at the University of Colorado Medical Center.



## **PROCEEDINGS OF SOCIETIES**

#### **Pulaski County Society Elects 1968 Officers**

Dr. Samuel B. Thompson of Little Rock was elected to the office of president-elect of the Pulaski County Medical Society for 1968. Dr. William S. Orr is president. Other officers elected are: Dr. Winston K. Shorey, vice president; Dr. Frank Westerfield, treasurer-elect; and Dr. M. D. McClain, secretary. The delegates for 1968 are: Dr. F. R. Buchanan, Dr. James L. Smith, Dr. James Flack, Dr. Frank Morgan, Dr. Robert Watson, Dr. Gilbert O. Dean, Dr. Edgar L. Easley, Dr. Samuel B. Thompson, Dr. George Mitchell, Dr.

William S. Orr, Dr. James Stuckey, Dr. Bill Floyd, Dr. Thomas Jansen and Dr. T. J. Smith. Alternate delegates are: Dr. Joseph D. Calhoun, Dr. Frank Padberg, Dr. Robert Henry, Dr. John McCullough Smith, Dr. Charles Kennedy, Dr. Myers Smith, Dr. James Weber, Dr. Guy R. Farris, Dr. Winston K. Shorey, Dr. K. W. Cosgrove, Dr. Tom Wortham, Dr. Morris Jackson, Dr. William N. Jones, and Dr. Fred Henker.

#### **Union County Society Elects 1968 Officers**

Dr. Larkin M. Wilson is president for 1968, Dr. John Harper is president-elect, and Dr. Ronald M. Lewis is secretary-treasurer of the Union County Medical Society.

#### **Dr. Crow Named President of Greene-Clay County Society**

Dr. Asa Crow of Paragould was named president of the Greene-Clay County Medical Society for 1968, succeeding Dr. Solon McGaughey. Dr. Bill Page, Corning, was elected president-elect. Dr. J. M. Williams was re-elected vice president and Dr. A. J. Baker was named secretary-treasurer, succeeding Dr. Lee Shedd. Dr. Irwin Joffe was named chief of staff of the Community Methodist Hospital, succeeding Dr. Crow.

#### **Deshaw County Society Sponsors Diabetes Drive**

Deshaw County Medical Society sponsored a Diabetes Detection Drive November 12-18 during the 1967 Diabetes Week.

#### **Pulaski County Sponsors Measles Immunization**

Pulaski County Medical Society has made plans to sponsor a mass measles immunization program in Pulaski County in January or February of 1968.



DR. RONALD L. BALDWIN is a new member of Columbia County Medical Society. He received his preliminary education from the University of Arkansas as well as his medical educa-

tion and graduated in June of 1962. He interned at Vanderbilt University in Nashville, Tennessee. He then returned to Arkansas and was a resident at the University of Arkansas in pediatrics from 1963 to 1965. He served in the United States Air Force at Hospital Sheppard from 1965 to 1967. He is now practicing medicine at 110 West North in Magnolia. His Specialty is pediatrics. He is a native of San Pedro, California.

A new member of the Garland County Medical Society is DR. ROBERT N. MUCKLEROY. Dr. Muckleroy is a native of Cleburne, Texas. He received his pre-medical education from Arlington State College and Texas A and M University. He graduated in 1952 and attended the University of Texas Southwestern Medical School in Dallas from which he graduated in 1959. He served his internship at William Beaumont General Hospital in El Paso, Texas and his residency at the Physical Medicine and Rehabilitation at Baylor University Medical Center in Dallas. He served in the Marine Corps from 1946 to 1948 and in the Army Medical Corps from 1959 to 1960. He has practiced in Silverton, Texas for five years and held a teaching appointment at the Physical Therapy School at Baylor University Medical Center. He specializes in rehabilitation medicine. He is now located in Hot Springs at the Hot Springs Rehabilitation Center.

Another new member of the Garland County Medical Society is DR. JACK ARTHUR KING, a native of Snow Lake, Arkansas. Dr. King attended the University of Arkansas School of Medicine and graduated in 1939. He served his internship at the Baptist Memorial Hospital in Memphis, Tennessee. He served in the U. S. Army from 1941 to 1945. He has been Assistant Professor of Hygiene and Health at the Kansas State University and has been in private practice at Bonham, Texas. He was with the Ames Laboratories, Ames, Iowa for three and one-half years; at the Kansas State University, Student Health Services, Manhattan, Kansas for one and one-half years and the Superintendent of Oklahoma State War Vets Facility, Sulphur Division, Sulphur, Oklahoma for one year. He has been in private practice for the past six months at Camden, Arkansas. He is a member of the Industrial Medical Association and the College of Sports Medicine. He is now practicing general medicine at Wade Clinic, 231 Central Avenue in Hot Springs.



## OBITUARY

### **Dr. Charles Stewart Wilson**

Dr. Charles Stewart Wilson, 90, of Siloam Springs died November 7, 1967, in Nashville, Arkansas, after an extended illness. Dr. Wilson has practiced medicine for 60 years and was a member of the Benton County Medical Society, the Arkansas Medical Society, and the American Medical Association. He was born in Lee County, Iowa, in 1877 and graduated from the St. Louis School of Medicine in 1905. He practiced medicine in Siloam Springs since 1927 and was retired at the time of his death. Survivors include one son, John Wilson of Nashville, and one brother, Ed Wilson of Gibbs, Missouri, and three grandchildren.

### **Dr. Hubert Matson Baird**

Dr. Hubert Matson Baird, formerly of Newport, died of a heart attack at his home in Forrest City at the age of 56. Dr. Baird has practiced medicine in Forrest City for the four past years and had practiced in Newport for twelve years before moving to Forrest City. He was born at LaFollette, Tennessee, in 1911 and was a graduate of the University of Tennessee. He served with the Navy overseas during World War II. He was a member of the First Methodist Church in Forrest City. Survivors include his wife, Mrs. Mary Allen Cowan Baird; one daughter, Mrs. Dennis Fronville of Memphis; three brothers and four sisters.

### **Dr. Edward W. Crow**

Dr. Edward W. Crow died on October 15, 1967, at the age of 62. He was born in Little Rock in 1905 and obtained his medical education from the University of Arkansas Medical School and the University of Tennessee Medical School in Memphis, Tennessee, where he graduated in 1930. He served in the U. S. Army and was a retired officer. He specialized in psychiatry and was at the Arkansas State Hospital in Little Rock for twelve years before coming to Benton where he has been practicing at the Benton Unit of the Arkansas State Hospital. He was a member of the Saline County Medical Society.

# T U B E R C U L O S I S



## A B S T R A C T S

Sponsored by Arkansas Tuberculosis Association

### PULMONARY ALVEOLAR MICROLITHIASIS

*This condition, in which many calcified microliths are present in the alveoli of the lung, appears to have a familial tendency. Cases involving three siblings are reported. No abnormality of calcium metabolism was found in any of the three.*

A rare disorder characterized by small calcified concretions in the alveoli, pulmonary alveolar microlithiasis is usually a familial disease.

This report is concerned with the pulmonary physiology and calcium metabolism in three siblings with this disease. All exhibited arterial hypoxemia associated with ventilation-perfusion abnormalities, modest impairment of respiratory mechanics, and normal calcium metabolism.

The index case was a farmer and part-time coal miner. Ten years after rejection for military service because of an abnormal chest X-ray he developed a cough and had episodes of small hemoptysis. Pulmonary alveolar microlithiasis was diagnosed. Later he stopped work because of dyspnea and still later developed heart failure. He died 10 years after the onset of clinical symptoms.

This patient was a thin, cyanotic white man with moderate respiratory distress. Roentgenograms revealed small, uniform-sized, calcified densities present throughout both lung fields but predominantly in the lower lobes. No abnormal calcifications or bone abnormalities were present on skeletal survey.

The second patient was a sister of the first. Her chest roentgenogram was identical to that of her brother. Over a period of six years she developed moderate exertional dyspnea, bouts of nocturnal dyspnea, a hacking cough, and later had episodes of small hemoptysis. Clubbing and cyanosis of the fingers were present.

Another sister complained of moderately severe exertional and nocturnal dyspnea several years after an abnormal chest roentgenogram. She also had cyanosis, digital clubbing, and intermittent pretibial edema, and a brief episode of hemoptysis.

There was no history of dust or fume exposure for either sister.

Pulmonary function studies showed that in each patient vital capacity was decreased. In the brother and one sister the expiratory flow velocity, ratio of residual volume to total lung capacity (TLC), and conductance to volume ratios were normal. In the other sister there was obstructive airway disease characterized by low ventilatory capacity, increased airway resistance, and a high residual volume-total lung capacity ratio.

Uneven intrapulmonary mixing of gases was present in all three subjects, and arterial oxygen tension was decreased in all. The brother had moderate hypocapnia and compensated respiratory alkalosis compatible with chronic hyperventilation. Diffusing capacity of carbon monoxide was decreased in all three.

In the brother and one sister for whom tests were made, serum calcium and phosphorus concentrations were at the lower limits of normal. Serum magnesium was at the upper range of normal and concentrations of citrate, hydroxyproline, and hexosamine were normal. Urinary pH was consistently acid.

The major pathologic findings in alveolar microlithiasis occur in the lungs and heart. The lungs contain innumerable calcified microliths that lie free in the alveoli. Morphologic abnormalities of alveolar septa and pulmonary capillaries are absent. Right ventricular hypertrophy is usually present. There are few clinical symptoms indicative of pulmonary or cardiovascular dysfunction despite roentgenographic evidence of extensive pulmonary involvement.

### "WASTED" PERfusion

In the three cases discussed, arterial hypoxemia was the main physiologic disturbance. In some areas of the lung, alveolar ventilation was decreased in relation to perfusion, leading to inadequate oxygenation of blood, or "wasted" perfusion.

From the extent of intra-alveolar calcific densi-

ties in the roentgenogram, the lungs of the patients appear large. However, the TLC, measured in the body plethysmograph, was small in one sister. It was within normal range in the other sister, who had obstructive lung disease and in whom a larger TLC might have been expected.

This dissociation between expected lung volumes and direct measurements suggests that the concretions displaced appreciable volumes of alveolar gas.

The two sisters demonstrated no detectable disturbances in systemic calcium metabolism. Serum calcium and phosphorus levels and alkaline phosphatase activity were consistently normal, as was the urinary excretion of hexosamine and hydroxyproline. All bone X-rays were normal.

The calcific concretions in alveolar microlithiasis were uniquely located within the alveolar spaces rather than in the septa, the usual loci for conditions characterized by hypercalcemia. There is no evidence that these alveolar microliths represent the ordinary variety of dystrophic calcification that may occur in any tissue in a number of local pathologic processes.

#### *LOCAL TISSUE FACTORS*

Local tissue factors are probably the basis for the development of the microliths in most cases of idiopathic pulmonary alveolar microlithiasis. Some of these factors associated with experimen-

tal tissue calcification include citrate concentrations, tissue alkalinity, changes in calcium-binding properties of proteins, deposition of acid mucopolysaccharides, and changes in the state of folding of mucopolysaccharide, alkaline phosphatase. Serum citrate, total mucopolysaccharides, and pH were normal in two of the patients. However, tissue abnormalities are not precluded. The patients refused lung biopsies.

In 27 of the reported cases of pulmonary alveolar microlithiasis, only 11 families were represented, suggesting a familial tendency. In these families the sex ratio is two women to one man. In the non-familial cases the sex distribution is equal.

In cases reported from Thailand, the patients had a history of inhalation of snuff which contained large amounts of calcium carbonate and phosphate. A case has been reported where the patient was exposed to brick dust. There is no indication that the disease has any other occupational background.

Although an environmental etiological factor cannot be completely excluded, the pedigree for the family in this report suggests an autosomal type of inheritance. There is no known consanguinity. A notable feature of the pedigree analysis is relative infertility among the affected members, in contrast to the numerous progeny of the other siblings.

#### **ANSWER—What's Your Diagnosis?**

**DIAGNOSIS:** Myxedema, probably juvenile type.

**X-RAY FINDINGS:** Bone changes were quite throughout the entire body. In the pelvis it is noted that there is failure of fusion of the pubis and ischium bilaterally. This fusion usually occurs at 4 to 8 years of age. The heads of the femurs are flattened and rough bilaterally indicating that epiphyseal growth was poor. There are secondary degenerative changes in the acetabuli.

Thyroid function studies revealed a low PBI. The  $I^{131}$  uptake was also low and failed to rise significantly after TSH stimulation.

#### **ANSWER—Electrocardiogram of the Month**

**RATE:** 80      **RHYTHM:** Slight sinus arrhythmia  
**PR:** .13      **QRS:** .07      **QT:** .32

#### **SIGNIFICANT ABNORMALITIES:**

Abnormal Elevation RS-T segment in I, II, aVI, aVF, and V6 with depression in aVR

#### **INTERPRETATION:** Abnormal

Wide-spread RS-T elevations indicating injury current; consistent with acute pericardial involvement.

#### **COMMENT:**

The electrocardiogram may be very helpful in instances of stab wounds or blunt trauma to the chest since fatal tamponade from hemopericardium may develop rapidly.

# ANNUAL MEETING PROGRAM

April 21-24, 1968

Hot Springs



## CONVENTION OFFICIALS

GENERAL CHAIRMAN: Harry Hayes, M.D., Little Rock

PROGRAM COMMITTEE:

Amail Chudy, M.D., North Little Rock

John W. Lane, M.D., Little Rock

John V. Busby, M.D., Little Rock

Art B. Martin, M.D., Fort Smith

Joseph S. Robinette, M.D., Pine Bluff

Betty Ann Lowe, M.D., Texarkana

Wright Hawkins, M.D., Fort Smith

E. Z. Hornberger, M.D., Fort Smith

A. S. Koenig, M.D., Fort Smith

SCIENTIFIC EXHIBITS CHAIRMAN: Harry Hayes, M.D., Little Rock

GOLF TOURNAMENT CHAIRMAN: D. B. Stough, III, M.D., Hot Springs

MEMORIAL SERVICE CHAIRMAN: E. Z. Hornberger, M.D., Fort Smith

PRESS LIAISON: A. C. Bradford, M.D., Fort Smith

Chairman, Public Relations Committee

# *Digest of Events*

## **REGISTRATION**

The registration desk will be located on the Mezzanine of the Arlington Hotel and will be open as follows:

Sunday, April 21	8:00 A.M. to 5:00 P.M.
Monday, April 22	8:00 A.M. to 5:00 P.M.
Tuesday, April 23	8:00 A.M. to 5:00 P.M.
Wednesday, April 24	8:00 A.M. to 12:00 Noon

Registration cards and badges will be prepared in advance for the officers of the Arkansas Medical Society and for the county society delegates. Delegates are requested to present credentials in proper form when registering.

All members and visitors are required to register, as admission to all sessions will be by badge only. Bring your 1968 membership card to facilitate registration. Members of the American Medical Association from other states may register as guests.

There will be no registration fee. Purchase of tickets for the cocktail party and banquet will be optional.

## **TELEPHONE SERVICE**

A special convention telephone will be installed at the Society's registration desk. The telephone number will be NA 4-4801. Give this number to your office personnel so that they may contact you in case of an emergency.

## **MEETINGS OF THE COUNCIL**

The Council of the Arkansas Medical Society will meet as follows:

Sunday, April 21	10:00 A.M., Juno Room (Sixth Floor Tower Suite)
Monday, April 22	7:30 A.M., Juno Room (Sixth Floor Tower Suite)
Tuesday, April 23	7:30 A.M., Juno Room (Sixth Floor Tower Suite)
Wednesday, April 24	9:00 A.M., Juno Room (Sixth Floor Tower Suite)
Wednesday, April 24	Immediately following the adjournment of the House of Delegates in Room "C" of the Conference Center (brief re-organizational meeting)

The voting members of the Council are: The councilors, the president, the first vice president, president-elect, secretary and treasurer. The speaker, vice speaker, and past presidents are members ex-officio without vote.

## **HOUSE OF DELEGATES**

The opening session of the House of Delegates of the Arkansas Medical Society will be called to order at 1:00 P.M. on Sunday, April 21st, in Room "C" of the Conference Center, Arlington Hotel.

The closing session and election of officers will begin at 10:00 A.M. on Wednesday, April 24th, in the same room.

All items of business will be referred by the Speaker of the House of Delegates to three reference committees. Open hearings on all resolutions and reports will begin at 3:30 P.M. on Sunday, April 21st. Any member of the Arkansas Medical

Society is welcome to attend the meetings of the reference committees and to express his views on the various reports, resolutions, etc. After the open hearings, the reference committees will go into executive session for the purpose of preparing reports and recommendations to the House of Delegates.

### **SCIENTIFIC SESSIONS**

The scientific program of the annual meeting will be presented on Monday and until noon on Tuesday. Distinguished speakers from Cornell University Medical College in New York will present the program. The lectures will be presented in Room "C" of the Conference Center of the Arlington. All convention visitors enter the lecture hall through the exhibit area.

Section meetings will be held on Tuesday afternoon.

The complete program for the annual meeting begins on page 389.

### **TECHNICAL AND SCIENTIFIC EXHIBITS**

Thirty-eight displays by firms whose products and services are of interest to Arkansas physicians will be housed in the Conference Center of the Hotel on the Mezzanine floor level.

In addition, there will be twenty scientific and institutional exhibits in the adjacent area of the Conference Center. A complete list of the scientific and technical exhibits appears on pages 394-396. Exhibit hours are from 8:00 A.M. to 5:00 P.M. on Monday and Tuesday.

### **WINE AND CHEESE TASTING PARTY**

A "Wine and Cheese Tasting Party" featuring Wiederkehr Wines and Kraft Cheeses will be held from 6:30 to 8:00 P.M. on Monday evening, April 22nd, in the Ballroom of the Arlington. Mr. Al Wiederkehr will be master of ceremonies for the wine tasting. This party is complimentary to all Medical Society and Auxiliary registrants.

### **TUESDAY EVENING COCKTAIL PARTY**

A cocktail party will precede the Inaugural Banquet on Tuesday evening. The party will be held in Room "C" of the Conference Center, beginning at 6:00 P.M. Tickets will be on sale at the convention registration desk.

### **PRESIDENT'S INAUGURAL BANQUET**

The social highlight of the 1968 annual session will be the President's Inaugural Banquet on Tuesday evening, April 23rd, in the Crystal Ballroom of the Arlington Hotel. A delicious buffet dinner will be served, beginning at 7:00 P.M.

Following dinner, Dr. H. W. Thomas of Dermott will be inaugurated as president of the Society.

Entertainment will be furnished by a member of the Society—Dr. Hermie Plunk of Jonesboro.

Tickets for the dinner will be available at the registration desk.

**PAST PRESIDENT'S BREAKFAST**

The traditional breakfast for former presidents of the Arkansas Medical Society will be held at 7:30 A.M. on Wednesday, April 24th, in Cafe 2 of the Arlington Hotel.

**FIFTY YEAR CLUB BREAKFAST**

The Society will host a breakfast for members of the Fifty Year Club at 7:30 A.M. on Tuesday, April 23rd, in Cafe 2 of the Arlington Hotel. Members of the Fifty Year Club may make a reservation for the breakfast at the Society's convention registration desk.

**AUXILIARY MEETING**

The Woman's Auxiliary to the Arkansas Medical Society will hold its annual meeting April 21-23 in the Arlington Hotel. General meetings will be held in the Tower Suite on the Mezzanine Level (Venus Room). Registration in the North Parlor on the lobby floor of the hotel.

**MEMORIAL SERVICE**

A joint Society-Auxiliary Memorial Service will be held Tuesday morning, April 23rd, in the Ballroom of the Arlington Hotel.

**FREE COFFEE BAR**

The Arkansas State Medical Assistants Society will have a free "coffee bar" in the exhibit area of the Conference Center. Members are urged to visit the medical assistants for a cup of coffee and discussion of the medical assistants' organization.

**GOLF TOURNAMENT**

The Golf Tournament will be held at the Belvedere Country Club. D. B. Stough, III, M.D., of Hot Springs is chairman of the Golf Tournament Committee. Members may play anytime Sunday, Monday and Tuesday. Physicians are to register with the club pro. Prizes will be awarded. Dr. Stough urges members to bring their golf clubs and participate in the tournament.

# *Distinguished Guest Speakers*

from

CORNELL UNIVERSITY MEDICAL COLLEGE  
New York City



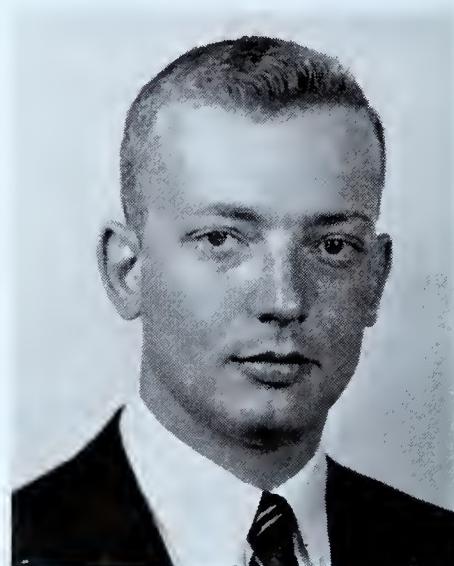
HERBERT CONWAY, M.D.  
Clinical Professor of Surgery  
(Plastic and Reconstructive)



CHARLES McSHEREY, M.D.  
Department of Surgery



BRUCE WEBSTER, M.D.  
Clinical Professor of Medicine



PHILIP H. ZWEIFACH, M.D.  
Department of Ophthalmology

**(Photographs not available)**

WILLIAM J. SWEENEY, M.D.  
Associate Professor of Obstetrics-Gynecology

ALBERT RUBIN, M.D.  
Kidney Transplant Unit

# *Scientific Program*

## **Monday Morning, April 22, 1968**

**Room "C", Conference Center  
Arlington Hotel  
(enter through exhibit area)**

- Jerome S. Levy, M.D., Little Rock, First Vice President, presiding
- 8:30 A.M. Film: "Chronic Bronchitis"
- 9:00 A.M. "Periodic Health Examinations—Their Value and Scope, Including A Review of the Results of Twenty Years Consecutive Examinations on a Group of 200 Executives," Dr. Webster
- 9:30 A.M. "Carcinoma of the Vulva," Dr. Sweeney
- 10:00 A.M. "Reconstruction of Head and Neck after Cancer Excision," Dr. Conway
- 10:15 A.M. "Basic Aspects of Glaucoma," Dr. Zweifach
- 10:30-11:00 A.M. VISIT EXHIBITS
- 11:00 A.M. "Carcinoma of the Colon," Dr. McSherry
- 11:45 A.M. "The Management of Acute Renal Failure," Dr. Rubin
- \* \* \* \* \*
- 12:15 P.M. DUTCH TREAT ROUNDTABLE LUNCHEON, Main Dining Room

## **Monday Afternoon, April 22, 1968**

**Room "C", Conference Center  
Arlington Hotel**

- David H. Pontius, M.D., West Memphis, Second Vice President, presiding
- 1:30 P.M. Film: "Modern Concepts of Epilepsy"
- 2:00 P.M. "Management of Burns," Dr. Conway
- 2:45 P.M. "Practical Aspects of Cataracts," Dr. Zweifach
- 3:00 P.M. "Radiographic Visualization of the Biliary Tract" (Film), Dr. McSherry
- 3:30-3:45 P.M. VISIT EXHIBITS
- 3:45 P.M. "The Theoretical and Medical Applications of Collagen," Dr. Rubin
- 4:30 P.M. "Adverse Reactions to Antibiotic Therapy," Dr. Webster
- 4:45 P.M. Adjournment

## **Tuesday Morning, April 23, 1968**

**Room "C", Conference Center  
Arlington Hotel**

- George F. Wynne, M.D., Warren, Third Vice President, presiding
- 8:30 A.M. Film: "Anorectal and Sigmoidoscopic Examination with Differential Diagnosis"
- 9:00 A.M. "Management of Ocular Trauma," Dr. Zweifach
- 9:45 A.M. "Hysterograms and Tubal Insufflations," Dr. Sweeney
- 10:15 A.M. "Surgery of Cleft Lip and Palate," Dr. Conway
- 10:30 A.M. "Renal Transplantation," Dr. Rubin
- 10:45 A.M. "Management of Hyperthyroidism," Dr. Webster
- 11:00 A.M. "Cholecystectomy and Common Duct Exploration" (Film), Dr. McSherry

# *Related Meetings*

## **Association of Tumor Clinic Staff Members in Arkansas**

The Association of Tumor Clinic Staff Members in Arkansas will meet in the Fountain Room of the Arlington Hotel on Monday, April 22nd, from 12:15 P.M. to 1:45 P.M. for a luncheon, scientific program, and business session. Dr. G. Thomas Jansen, Association Chairman, will preside. The program is as follows:

### **Cancer Seminar**

"Mammography and Breast Cancer," Robert L. Egan, M.D., Chief, Mammography Section, Associate Professor of Radiology, Emory University, Atlanta, Georgia

Election of officers—announcement of ballot results

This program is acceptable for one accredited hour by the American Academy of General Practice.

### **Obstetrics-Gynecology**

The Obstetrics-Gynecology Section will meet on Tuesday afternoon, April 23rd, beginning at 1:30 P.M. in the Apollo Room of the Arlington Hotel (7th Floor Tower Suite). The program will be as follows:

"Teenage Pregnancy," Rex Ramsey, M.D., Little Rock

"Epidemiology of Cancer of the Cervix," Douglas E. Smith, M.D., Atlanta, Georgia

"Fetal Scalp Sampling," B. E. Smith, M.D., Miami, Florida

"Adoptions in Arkansas," A. Tharp Gillespie, M.D., Little Rock

"Course and Anatomy of the Pelvic Ureter," Dr. William J. Sweeney, New York City

"Stimulation of Ovulation," James Romine, M.D., Little Rock

A business meeting will follow the scientific program, beginning at 4:30 P.M. A cocktail party is scheduled for 5:00 P.M.

### **E.E.N.T.**

The Eye, Ear, Nose and Throat Section will meet all day in the Mercury Room (3rd floor Tower Suite), beginning at 9:00 A.M. on Tuesday. The scientific program is as follows:

9:00 A.M. "The Pathogenesis of Visual Loss in Glaucoma," John R. Lynn, M.D., Chairman, Department of Ophthalmology, Southwestern Medical School of the University of Texas, Dallas

10:00 A.M. "Microsurgery for Glaucoma," Dr. Lynn

11:00 A.M. "Moving Retinal and Choroidal Emboli," Philip Zweifach, M.D., Department of Ophthalmology, Cornell University Medical College

12:15 P.M. Lunch, Panel Program, Business Meeting

2:45 P.M. "Maxillary-Premaxillary Approach to Septum Surgery," Charles S. Lane, Jr., M.D., Fort Smith

### **GENERAL PRACTICE**

The Arkansas Academy of General Practice will hold a scientific session from 2:00 P.M. to 4:00 P.M. on Tuesday, April 23rd, in the Venus Room of the Arlington Hotel (2nd floor Tower Suite).

### **INTERNAL MEDICINE**

The state meeting of the Arkansas Component of the American Society of Internal Medicine will be held on Tuesday, April 23rd, in the Jupiter Room of the Arlington Hotel, Hot Springs. There will be a luncheon and business meeting beginning at 12:15 P.M. Dr. T. J. Smith, president of the Arkansas Component of the American Society of Internal Medicine, will be presiding.

A Medical Socio-Economic Symposium will begin at 1:00 P.M. The program for the symposium is as follows:

- 1:00 P.M. Dr. Joe Painter, Trustee of the American Society of Internal Medicine, "Comprehensive Health Programs"  
1:15 P.M. Mr. Edward Rensch, State Health Planning Director, "Comprehensive Health Planning in Arkansas"  
1:30 P.M. Dr. Roger Bost, Director, Regional Medical Program, "Planning in the Field of Heart, Cancer, and Stroke"  
1:45 P.M. Mr. Allen Weintraub, Administrator, St. Vincent Infirmary, "Hospital Administrator in Comprehensive Programs"  
2:00 P.M. Dr. George Mitchell, Medical Director, Arkansas Blue Cross-Blue Shield, "The Role of the Intermediary and Third Party Negotiating Teams"  
2:15 P.M. Dr. Jerome Levy, Health Advisory Committee, "Role of Organized Medicine"  
2:30-3:00 P.M. Question and Answer Session

In addition to those listed above, Dr. Bruce Webster of Cornell University Medical College will participate in the panel program.

### **RADIOLOGY**

The Arkansas Radiological Society will meet on Tuesday, April 23rd, in the Juno Room (6th floor Tower Suite). A luncheon beginning at 12:15 P.M. will be followed by a business session and scientific program. Robert L. Egan, M.D., Associate Professor of Radiology, Emory University, Atlanta, Georgia, will discuss "Current Status of Mammography."

### **ORTHOPEDICS**

The Orthopedic Section will meet for a luncheon beginning at 12:00 Noon on Tuesday, April 23rd, in the Mars Room of the Arlington (4th floor Tower Suite). A business meeting and scientific program will follow the luncheon, with John R. Stacy, M.D. of Oklahoma City as guest speaker. Dr. Stacy will speak on "Problems of the Shoulders."

### **ANESTHESIOLOGY**

The Anesthesia Section will meet at 4:00 P.M. on Tuesday, April 23rd, the Montagu Room of the Arlington for a scientific program. Bradley Smith, M.D., Associate Professor of Anesthesiology, University of Miami, will speak on "Pentothal-Nitrous Oxide-Succinylcholine Anesthesia for Cesarean Section."

### **PEDIATRICS**

The Pediatrics Section will hold a scientific meeting on Tuesday afternoon, April 23rd, in the Mars Room (4th floor Tower Suite). The program is to be announced.

# *Memorial Service*

**Joint Society-Auxiliary Service, Ballroom, Arlington Hotel**

**11:30 A.M., Tuesday, April 23rd**

Presiding: Joseph A. Norton, M.D., President, Arkansas Medical Society

Memorial Address: E. Z. Hornberger, M. D., Fort Smith

The following is a listing of Society members who have passed away since the 1967 convention:

Dr. H. M. Baird, Newport
Dr. Cecil F. Boulden, Fort Smith
Dr. W. B. Center, State Sanatorium
Dr. Edward W. Crow, Benton
Dr. Benjamin W. Drompp, Little Rock
Dr. Masauki Hara, Little Rock

Dr. J. O. Scott, Hot Springs
Dr. J. S. Spillyards, Pine Bluff
Dr. James M. Walls, Blytheville
Dr. D. E. White, El Dorado
Dr. C. S. Wilson, Nashville

## *House of Delegates Meetings*

### **FIRST MEETING, HOUSE OF DELEGATES**

**1:00 P.M., Sunday, April 21, 1968**

**Room "C", Conference Center, Arlington Hotel**

J. P. Price, M.D., Speaker of the House of Delegates, presiding.

1. Call to Order
2. Roll Call of Delegates
3. Report of Credentials Committee
4. Introduction of Guests
  - Mrs. Karl F. Ritter, Lima, Ohio, President, Woman's Auxiliary to the American Medical Association
  - Mrs. C. C. Long, Ozark, President-elect, Woman's Auxiliary to the American Medical Association
  - Mrs. Art B. Martin, Fort Smith, President, Woman's Auxiliary to the Arkansas Medical Society
  - Mrs. C. D. Burroughs, Pine Bluff, President-elect, Woman's Auxiliary to the Arkansas Medical Society
5. Adoption of Minutes of 91st Annual Session, as published in the June 1967 issue of the Journal of the Arkansas Medical Society.
6. Report of the Council on meetings held, if any, since publication of March Journal
7. Reports of Committees
 

Reports as published in March Journal may be amended by Committee Chairman. All reports will be referred to the Reference Committees.
8. New Business
9. Selection of Nominating Committee
10. Adjournment

### **FINAL MEETING**

**10:00 A.M., Wednesday, April 24th, 1968**

**Room "C," Conference Center, Arlington Hotel**

1. Call to order
2. Report of Nominating Committee
3. Election of Officers:
  - President-elect
  - First Vice President
  - Second Vice President
  - Third Vice President
  - Treasurer
  - Secretary
  - Speaker of the House of Delegates
  - Vice Speaker of the House of Delegates
  - Councilors (one from each of the ten councilor districts)
  - Councilors whose terms expire are:
    1. Bascom P. Raney, M.D., Jonesboro
    2. Hugh R. Edwards, M.D., Searcy
    3. L. J. Pat Bell, M.D., Stuttgart
    4. A. W. Lazenby, M.D., Dumas
    5. Paul Sizemore, M.D., Magnolia
    6. John P. Wood, M.D., Mena
    7. Robert F. McCrary, M.D., Hot Springs
    8. James Morrison, M.D., Little Rock
    9. Ross Fowler, M.D., Harrison
    10. A. S. Koenig, M.D., Fort Smith
  - Delegate to the American Medical Association House of Delegates (Term of James M. Kolb, M.D., expires December 31, 1968)
  - Alternate Delegate to the American Medical Association House of Delegates (Term of C. C. Long, M.D., expires December 31, 1968)
  - Election to fill vacancies on State Boards
  - Report of Reference Committees
  - Supplemental Report of the Council
  - Selection of Place for 1970 Annual Session
  - Adjournment

**REFERENCE COMMITTEES**

Reference Committees appointed by the Speaker of the House of Delegates will hold open hearings to discuss the committee reports published in the March Journal, as well as any supplemental reports and resolutions referred to them during the first meeting of the House of Delegates on Sunday, April 21st. All members are urged to participate in the discussion at the meetings. The committees will meet at 3:30 P.M. on Sunday, April 21st, in the Arlington Hotel.

**VACANCIES ON STATE BOARDS**

**Arkansas State Medical Board**

A vacancy occurs in the Fourth Congressional District, the counties of which are listed below. Members from these counties are urged to meet in the Arlington Hotel immediately following adjournment of the House of Delegates meeting on Sunday, April 21st, to vote for nominees. Nominations should be reported to the convention registration desk.

Counties in district: Ashley, Bradley, Calhoun, Clark, Columbia, Hempstead, Howard, Lafayette, Little River, Miller, Montgomery, Nevada, Ouachita, Pike, Polk, Sevier, and Union.

Present Member: George F. Wynne, M.D., Warren, term expires December 31, 1968, eligible for re-appointment.

**Arkansas State Board of Health**

Vacancies occur in the First and Fifth Congressional Districts, the counties of which are listed below. Members from these counties are urged to meet in Room "C" of the Conference Center, Arlington Hotel, immediately following adjournment of the House of Delegates meeting on Sunday, April 21st, to vote for nominees. Nominations should be reported to the convention registration desk. There must be three nominees for each vacancy.

*First District:*

Counties in district: Clay, Craighead, Crittenden, Cross, Greene, Lee, Mississippi, Phillips, Poinsett, and St. Francis.

Present Member: Milton Deneke, M.D., West Memphis, term expires December 31, 1968, eligible for re-appointment.

*Fifth District:*

Counties in district: Conway, Faulkner, Perry, Pope, Pulaski, and Yell.

Present Member: C. A. Archer, Jr., M.D., Conway, term expires December 31, 1968, eligible for re-appointment.

# *Scientific Exhibits*

The scientific exhibits will be located in the Mezzanine Lobby area and the area of the Conference Center adjacent to the technical exhibits, Arlington Hotel. All members are urged to visit the exhibits as they are an integral part of the program. The following will have scientific exhibits.

Dr. Jack Mobley, Little Rock  
Dr. Barry Sorrells, Little Rock  
Arkansas Children's Colony, Conway  
Radiology Associates, Little Rock  
University of Arkansas Medical Center Library, Little Rock  
Dr. Harry Hayes, Jr., Little Rock  
Cleft Palate Clinic, Little Rock  
Dr. A. J. Brizzolara, Little Rock

Dr. D. B. Stough, III, Hot Springs  
Dr. Morrissey Henry, Fayetteville  
Dr. Dale Alford, Little Rock  
Crippled Children's Division, State Welfare Department  
Dr. William B. Stanton, Little Rock  
Dr. Austin Grimes, Little Rock  
Dr. G. Allen Robinson, Harrison  
Radiology Consultants, Little Rock  
Dr. W. Sexton Lewis, Little Rock  
Drs. Allen and McCracken, Little Rock  
Arkansas Regional Medical Program, Little Rock  
Arkansas Rehabilitation Service, Little Rock  
Arkansas Tuberculosis Association, Little Rock

The Mead Johnson Laboratories Aesculapius Award will be presented for the most outstanding scientific exhibit.

# *Technical Exhibits*

The business firms who purchase exhibit space at our Annual Session contribute a great deal to the financing, as well as to the educational aspects, of the meeting. The number of visits to the technical exhibits is the only criteria by which these companies can judge the value they receive from the investment in booth rental, displays, and employees' time. You will be rewarded for the time you spend visiting the exhibits. Following are descriptions of displays to be featured.

## BRISTOL LABORATORIES

## SANDOZ PHARMACEUTICALS

Sandoz Pharmaceuticals cordially invites you to visit our display at Booth No. 2, where we are featuring Mellaril, Sansert, Cafergot P-B, Fiorinal and Fiorinal with codeine.

## PARKE, DAVIS AND COMPANY

You are cordially invited to visit the Parke-Davis exhibit which features two new products—Norlestrin®, 1 mg., an oral contraceptive, and Ponstel® (mefenamic acid), an oral analgesic.

## THE STUART COMPANY

A cordial invitation is extended to all members and guests attending this meeting to visit the Stuart Company booth. Specially trained representatives will be in attendance to answer your questions on new products, developed in our modern laboratories, which have particular interest for the medical profession. Products featured are DIALOSE®, DIALOSE® PLUS, MULVIDREN-F® MULVIDREN®, MYLANTA®, MYLICON®, STUART PRENATAL® and SORBITRATE®.

## RATHER, BEYER AND HARPER, AGENTS

At the booth we will have brochures and all information on the Arkansas Medical Society's Group Plans of Insurance, specifically the Income Protection Plan, the Office Overhead Expense Plan and the Million Dollar Professional Liability Policy. We will also have our records available so that each doctor may review the insurance coverages

which he has under the Group Plans of the Arkansas Medical Society.

## G. D. SEARLE AND COMPANY

You are cordially invited to visit the SEARLE booth where our representatives will be happy to answer any questions regarding Searle Products of Research. Featured will be information on Ovulen-21, Enovid, Aldactazide, Flagyl, Lomotil, Pro-Banthine and other drugs of interest.

## CIBA PHARMACEUTICAL COMPANY

CIBA Professional Service Representatives will be pleased to discuss Ser-Ap-Es.

## A. H. ROBINS COMPANY

You are cordially invited to visit the Robins display and meet our representatives who will welcome the opportunity to discuss products of interest with you.

## ARKANSAS BLUE CROSS-BLUE SHIELD

Our booth is for your convenience and we welcome your visit. Blue Cross-Blue Shield's representatives are always ready to help solve any case problem or answer your questions. Our association with the medical profession has been largely responsible for our growth in membership which now totals over 300,000—an achievement of which we should all be proud.

## MEAD JOHNSON LABORATORIES

The Mead Johnson Laboratories' exhibit has been arranged to give you the optimum in quick service and product information. To make your visit productive, specially trained representatives will be on duty to tell you about their products.

## BILL SHORT MOTOR COMPANY

Visit Booths No. 11 and No. 12 and view a Mercedes-Benz. Our representatives will be on hand to discuss the features of the automobile with you.

## WILLIAM T. STOVER, INC.

The William T. Stover Company, Inc., Little Rock, Arkansas, enjoying its 28th year of service to the medical profession, will occupy Booth No. 13, which will be staffed by informed and qualified representatives—eager to wel-

## ARKANSAS MEDICAL SOCIETY MEETING, APRIL 21-24, 1968

come you and assist in any manner possible—as well as to show you the up-to-date developments in the medical and surgical industry.

### SMITH, KLINE AND FRENCH LABORATORIES

Representatives will be on hand to answer your specific questions and provide information on their products and services.

### LOMA LINDA FOODS

Loma Linda Foods, one of the oldest manufacturers of fiber-free, hypoallergenic infant soy milk, will show evidence of the nutritional adequacy of the product SOYALAC. Representatives will explain why it is unusual in that it does not settle out, is milklike in texture, and does not tend to raise infants' serum cholesterol. Uses for adult ulcer patients and in cholesterol-lowering diets will be discussed. Samples will be served and recipes presented indicating the versatility of the product in diets of those with milk allergies or who for other reasons need to eliminate dairy milk from the diet.

### UPJOHN COMPANY

Professional representatives of The Upjohn Company are eager to contribute to the success of your meeting. We are here to discuss with you products of Upjohn research that are designed to assist you in the practice of your profession. We solicit your inquiries and comments.

### ABBOTT LABORATORIES

Abbott representatives will be pleased to present information and answer any of your questions relating to our broad line of Hospital Products and Services and Professional Pharmaceuticals.

### ORTHO PHARMACEUTICAL CORPORATION

Welcome to Booth No. 18 where Ortho is proud to present the most complete line of medically accepted products for the control of conception. Also on display is our well-known line of therapeutic products. Representatives will be happy to discuss all of our products with you and answer any question which you may have concerning their use and application.

### AYERST LABORATORIES

Ayerst Laboratories extends an invitation to visit our exhibit located in Space No. 19 where ATROMID-S® and PREMARIN® are being featured. Our representatives will be pleased to discuss these or other Ayerst Products with you.

### WILLIAM P. POYTHRESS & COMPANY, INC.

TROCINATE—a new concept in smooth muscle spasmolysis, acting directly upon muscle cells. Not an anticholinergic. No side-effects characteristic of autonomic blocking drugs. High therapeutic index. Trocinate is particularly effective against functional diarrhea, mucous colitis, diverticulitis, spastic ureteritis and bladder spasm. No significant side-effects have ever been reported.

### MERCK SHARP & DOHME

The Merck Sharp & Dohme exhibit has been designed to supplement the physician's therapeutic armamentarium. Technically trained personnel are present to discuss the scope and variety of services offered.

### SCHERING LABORATORIES

Schering Laboratories invite you to visit their exhibit, Booth Space No. 22, where their representatives will be available to discuss with you any questions you may have on CELESTONE® SOLUSPAN® Injection, TINACTIN®, DRIXORAL®, AFRIN®, ETRAFON®, GARAMYCIN®, VALISONE®, GITALIGIN®, or any other Schering product.

### WILLIAM H. RORER, INC.

William H. Rorer, Inc. takes great pride in exhibiting its fine pharmaceutical products at this convention. Our representatives will gladly discuss the merits of these products with you.

### SMITH, MILLER & PATCH, INC.

Smith, Miller & Patch, Inc. will appreciate an opportunity to discuss with you our recently enlarged line of hematinic tablets including VITRON, VITRON-C and VITRON-C PLUS; and many of our ophthalmic products for ocular conditions encountered in General Practice; our new, fast-acting well tolerated NASOCON NASAL SPRAY; and a new non-barbiturate hypnotic, SOMNAFAC Capsules.

### WARNER-CHILCOTT LABORATORIES

Warner-Chilcott Laboratories will feature, at Booth Space No. 25, GELUSIL, COLYMYCIN, and PRESATE.

### AUTOMATED MANAGEMENT SYSTEMS

Our exhibit will display the various computer forms and management reports that are received by our A.M.S. doctor clients. Automated Management Systems handles the doctor's accounts receivable in a professional manner. It gives the doctor more time for patients, time for more patients and frees him and the office staff of burdensome non-medical detail. The A.M.S. plan was designed specifically for the medical profession. As a doctor client of A.M.S., no capital investment is made, although millions of dollars worth of electronic computers and equipment are required at the processing centers.

### ASTRA PHARMACEUTICAL PRODUCTS, INC.

Information and descriptive literature pertaining to Xylocaine® (lidocaine) and Citanest® (prilocaine) local and topical anesthetics, and iron preparations Astrafer® (dextriferron) for intravenous use and Jectofer® (iron sorbitex) for intramuscular administration will be available at the Astra booth.

## ARKANSAS MEDICAL SOCIETY MEETING, APRIL 21-24, 1968

### C. DEWITT LUKENS COMPANY

A complete and comprehensive line of surgical sutures including the latest innovations in packaging, needles and suture material.

### PFIZER LABORATORIES

Professional Service Representatives from Pfizer Laboratories will be pleased to have you in attendance at their booth to discuss the latest products of Pfizer research.

### GEIGY PHARMACEUTICALS

Geigy Pharmaceutical cordially invites members and guests of the Society to visit its exhibit. The exhibit features important new therapeutic developments in the management of cardiovascular disease as well as current concepts in the control of inflammation; hypertension and edema; depression; obesity; and other disorders, which may be discussed with representatives in attendance.

### ELI LILLY AND COMPANY

You are cordially invited to visit the Lilly exhibit. Our sales representatives in attendance welcome your questions about Lilly products. You may be particularly interested in discussing V-CILLIN K® Potassium Phenoxymethyl Penicillin.

### WINTHROP LABORATORIES

You are cordially invited to visit Winthrop Laboratories Booth Space No. 32 where the following products will be featured: NEW! TALWIN® brand of Pentazocine (as lactate), ISUPREL® (brand of isoproterenol) MISTOMETER, NEGGRAM® (brand of nalidixic acid).

### DABBS SULLIVAN, TRULOCK AND COMPANY, INC.

Dabbs Sullivan, Trulock & Company, Inc. will be represented by Melvin Spear who will be happy to answer your questions on securities and assist you in establishing a sound investment program. Brochures will be available.

### KAY SURGICAL, INC.

### ENCYCLOPAEDIA BRITANNICA

Encyclopaedia Britannica welcomes members of the Arkansas Medical Society. As part of the Britannicas' 200th Anniversary, we have on display the great new edition of Britannica, Great Books of the Western World, the Replica, Prospective etc. Stop and inspect these products in Booth Space No. 35. They are available to the members at our convention offer.

### E. R. SQUIBB AND SONS

E. R. Squibb & Sons has long been a leader in development of new therapeutic agents for prevention and treatment of disease. The results of our diligent research are available to the Medical Profession in new products or improvements in products already marketed. At Booth Space No. 36, we will be pleased to present up-to-date information on these advances for your consideration.

### THE COCA COLA COMPANY

Iced cold Coca-Cola served through the courtesy and cooperation of the Coca-Cola Bottling Company of Hot Springs, Inc., and The Coca-Cola Company.

### MOUNTAIN VALLEY MINERAL WATER COMPANY

Mountain Valley Mineral Water Company will have water coolers with Mountain Valley water at the coffee bar. Stop by for a drink of cool Mountain Valley water.



# *House of Delegates Business Affairs*

*The following reports are brought to the attention of individual members and the county medical societies. The items reported here represent those received in time for publication in advance of the meeting. All reports will be referred to reference committees and members are urged to attend the open hearings of the reference committees to express their views.*

## **ANNUAL COMMITTEE REPORTS**

### **Committee on Public Health**

**Ben N. Saltzman, M.D., Chairman**

The Chairman of this committee has been appointed to the Governor's Advisory Council on Comprehensive Health Planning. Several meetings of the Council have already been held and the chairman has served on two sub-committees. The present plans call for examination of the State Health Department and the making of recommendations for Comprehensive Health Planning in relation to the activities of this department. The other sub-committee reports will be presented by the various chairmen.

### **Committee on Rural Health**

**Ben N. Saltzman, M.D., Chairman**

The committee on Rural Health of the Arkansas Medical Society has been very active this past year. The chairman presided at the National Rural Health Conference at Charlotte, North Carolina, in the spring of last year. The chairman continues to serve as chairman and member of the Council on Rural Health of the American Medical Association, and has held several meetings of the Council. The ninth Arkansas Rural Health Conference was held November 8-9 at the Marion Hotel in Little Rock. The Conference was sponsored by this committee and by the Arkansas Academy of General Practice. Committee meetings were held with the advisory committee which included the Agricultural Extension Service of the University of Arkansas, The Arkansas Farm Bureau Federation, The State Board of Health, The Woman's Auxiliary of the Arkansas Medical Society, The Arkansas State Dental Association, The Arkansas Extension Homemakers Council, The Arkansas Farm Bureau Woman's Committee, and The Arkansas Blue Cross-Blue Shield, Inc.

The program of the Conference included special remarks by the President of the State Medical Society, Dr. Joseph A. Norton, a panel on "What's Being Done in Arkansas?" moderated by Bob Buice, Farm Director, KARK, Little Rock. On the panel were Don Griscum of the Arkansas Farm Bureau Federation, Mrs. Albert King, President of the Extension Homemakers Council of Arkansas, Mrs. C. C. Long, President-elect of the Woman's Auxiliary to the American Medical Association, and Mrs. Louise Brooks, Director of Food Services, Fayetteville Public Schools. The American National Red Cross presented a program entitled, "Would You Know What To Do?" The Arkansas Representative and other members of the Pulaski County Chapter provided demonstrations and recommendations. The Arkansas Heart Association presented a demonstration on Cardio-Pulmonary Resuscitation. Mr. Leon Urben, Executive Director, National Safety Council Farm Conference, spoke on the "Role of Accident Prevention in the Rural Environment." Another panel entitled "Agricultural Chemicals: Nature, Use, and Effect" was moderated by Marvin Vines, Farm Director, KAAY. Appearing on the panel were Dr. Harold R. Hurst, Extension Agricultural Chemical Specialist, who spoke on the "Effective Use of Agricultural Chemicals." A presentation was made concerning the operation of a Poison Control Center at the University of Arkansas Medical Center. Dr. L. D. Seager, Professor of Pharmacology, University of Arkansas Medical Center, spoke on "The Effect of Agricultural Chemicals on Man," and Mr. Arnold Berner, Director of Public Relations, Arkansas Farm Bureau Federation, talked on "The Practical Aspects of Agricultural Chemicals." Mr. Y. W. Whelchel, Coordinator of Public Safety, Office of the Governor, spoke on "Highway Safety." Mr. C. R. Sawrie, Manager of Agricultural Development, Arkansas Power and Light Company, spoke on "Electrical Accidents." Mr. Jeff Farris of the State College of Arkansas at Conway, spoke on "Health Education in the Schools." Dr. Bond Bible, Secretary to the Council on Rural Health of the American Medical Association, summarized the conference.

The Committee on Rural Health this year has interested itself with the problems of Rural Emergency Medical Services, and these emergencies were stressed at the conference. The committee sponsored a resolution which was adopted by the Council of the Arkansas Medical Society on Emergency Medical Services.

#### **Committee on Medical Education**

Calvin J. Dillaha, M.D., Chairman

#### **Committee on Postgraduate Education**

George K. Mitchell, M.D., Chairman

#### **Committee on Long Range Planning**

Thomas H. Wortham, M.D., Chairman

A joint meeting of the Arkansas Medical Society Committees on Medical Education, Postgraduate Education and Long Range Planning Committee was held in the West Room of the Marion Hotel on December 16, 1967.

Present for this meeting were Dr. Lee Parker, Dr. Eli Gary, Dr. Calvin Dillaha, Dr. George K. Mitchell, Dr. J. K. Patrick, Dr. Glen Baker, Dr. Tom Wortham, Dr. Randolph Ellis, Dean Winston Shorey, Dr. James Taylor, Dr. Hugh Edwards.

Dr. Dillaha acted as chairman of the combined committees and called the meeting to order. He suggested that the committees meet jointly once a month; together with the Liaison Committee of the Pulaski County Medical Society and perhaps some lay people. This meeting would be for the purpose of discussing the problems of medical education, what the Medical Society could do, and for the members of these committees to be better able to educate the local Medical Societies with regard to these problems.

Dr. Mitchell expressed his opinion that the major problem with medical education was just that the University of Arkansas Medical Center needed more operating funds.

Dean Shorey then discussed a projected change of curriculum for the Medical Center. He felt that in the future after two years of medical school, students with different specialty interests would have different courses. He also felt the medical student should have contact with patients earlier in medical school than they presently have. Dr. Ellis stated that these same con-

cepts had been fostered by the Academy of General Practice.

Dr. Mitchell then suggested that since Dean McPhail would be in charge of postgraduate education at the University of Arkansas Medical Center, that he would be available to meet with component societies throughout the state and to explain the plans and needs of the University of Arkansas Medical Center.

Dr. Wortham felt the primary point of concern is that the doctors throughout the state need to know the broad outline of what long range plans the University of Arkansas Medical Center has. The feeling of the majority of members present was that specific problems relating to what could improve the School of Medicine were of more interest to physicians over the state rather than long range planning.

Dean Shorey stated that the best way to communicate with physicians is through other physicians. He announced that members of the faculty were now visiting with medical groups over the state when invited and discussing medical education. He feels that the University of Arkansas Medical Center needs 70 additional members on the faculty to meet the national average. However, if money were appropriated for this, it would then be necessary to have additional space at the Medical Center. He stated that he asked for a budget for additional faculty members at the last meeting of the legislature. However, the budget was not approved. Budgets must be first submitted to the Commission of Higher Education, a Commission appointed by the governor two years ago. Budgets for all institutions of higher learning including the University of Arkansas Medical Center are submitted to this Commission and they in turn make recommendations to the legislature.

Dr. Shorey also stated there were plans to form a Board of Regents to replace the individual Board of Trustees for each college.

Dr. Patrick suggested the committees meet again one afternoon prior to the spring Medical Society meeting. This meeting will be set for a Friday afternoon and evening. It was suggested that other members of the faculty of the University of Arkansas Medical Center be present at this meeting.

### **Committee on Hospitals**

**Art B. Martin, M.D., Chairman**

The Hospital Committee of the Arkansas Medical Society met December 16 at the Marion Hotel during the Society's third annual officers conference. Those attending were Dr. Art B. Martin, Fort Smith, Chairman; Dr. John Wood, Mena; Dr. Martin Heidgen, Russellville; Dr. Wright Hawkins, Fort Smith; and Mr. Ben Owen, President, Arkansas Hospital Association.

The committee's discussion period centered on the utilization of hospital facilities, hospital accreditation, the shortage of trained medical personnel, and the rising cost of medicine. With these things in mind, the committee would like to submit the following recommendations for the Society's consideration:

1. The utilization committee of each hospital should acquaint themselves and the hospital staff with comparative utilization statistics.
2. A physician member should be added to the JCAH Examining Committee already operating in the Arkansas Hospital Association.
3. The Arkansas Medical Society should join the Arkansas Hospital Association in promoting health careers.
4. The Society should make known to the public the reasons behind the rising cost of medicine.
5. The Arkansas Medical Society and the Arkansas Hospital Association should jointly consider employment of a full or part time public relations representative.

### **Committee on Liaison With the State Board of Health**

**Purcell Smith, Jr., M.D., Chairman**

The Sub-Committee on Liaison with the State Board of Health has been in contact with representatives of the State Health Department, by letters and by telephone. It was the consensus of opinion that there were no matters of great significance pending at this time. Dr. Herron met with the Sub-Committee on December 16, 1967, and matters pertaining to the State Health Department were informally discussed. Dr. Herron was encouraged to contact this Sub-Committee whenever he feels that there are matters that should be considered. The Sub-Committee will

also feel free to contact Dr. Herron if it becomes aware of problems that should be discussed.

### **Committee on Public Relations**

**A. C. Bradford, Chairman**

The committee on Public Relations met December 16, 1967, at the Marion Hotel during the society's third annual officers conference. Those in attendance were Gordon P. Oates, Paul A. Wallick, Omer E. Bradsher, G. Thomas Jansen, A. C. Bradford.

1. The committee spent much of the hour discussing the problems of providing and promoting a program of public relations. It was stressed that labor unions, many businesses, and the larger hospitals in the state all have employed people who are specially trained in public relations. Our state society's fiscal operation is comparable to any of these. The committee urgently requests that the society seriously consider a substantial increase in the budget for public relations, so that billboards and poster campaigns, newspaper, radio and television exposure can be obtained. Also, since administrative affairs of the society utilize almost all of Mr. Paul Schaefer's time, it is urgently requested that an assistant to the executive vice president be hired whose principal responsibility will be public relations. The committee did not feel that our problems of public relations could be handled by an agency on a part-time basis. The one great handicap to our public relations is our inadequate budget.
2. The committee recommends that the chairman of the committee of public relations be specifically invited and requested to attend the council meetings, so that he may be better informed of problems of the society and so that our committee can function relative to the immediate problems of the society.
3. The committee recommends that compulsory new member orientation be further explored by the society. Voluntary new member orientation has repeatedly failed even at this third annual officers conference.
4. The committee recommends that the councilor for each district be designated as the society's liaison with the press, and that the radio, television, newspaper media be advised of their official designation.

5. To further unify the membership of our society, the committee recommends that each organized speciality group within our state be permitted to send a voting delegate to the House of Delegates. This would help to draw the speciality groups into active participation in our society and would not greatly overburden the size of the House of Delegates nor change the voting strength in the House.

**Sub-Committee on State Health and Medical Resources for Civil Defense**

Edgar J. Easley, M.D., Chairman

The Sub-Committee on State Health and Medical Resources for Civil Defense has not met formally during the past few months. However, certain data and pertinent information has been gathered which is of interest. The Sub-Committee will meet on an announced date in February with staff members of the Division of Health Mobilization and Civil Defense of the Arkansas State Department of Health. This will be an orientation session and an evaluation study.

The State Department of Health Emergency Health Resources Planning Program has continued to indicate progress in all areas pertaining to disaster preparedness.

Individuals, as well as agencies, within all levels of government are becoming more and more aware of the implications that would develop from the destruction of essential medical supplies during a major disaster or enemy attack.

The Medical Self-Help Training Course and Cardiopulmonary Resuscitation programs have been very effective as a means of informing groups about essential supplies and how to survive during a disaster.

The Medical Self-Help Training Course consists of sixteen hours in Emergency Medical Aid and Nursing Care. It is designed to teach at least one member of each family the techniques necessary for survival in the absence of trained medical personnel. To date, 100,278 students throughout Arkansas have completed the course in 2,375 classes. The Cardiopulmonary Resuscitation Course is conducted for specially selected groups upon recommendation of, and cooperation with, the Arkansas Heart Association. Records indicate that 1,428 students have attended 77 scheduled

classes given by the Division of Health Mobilization.

The Federal Government, through the Arkansas State Department of Health, continues to stockpile emergency medical supplies and equipment in selected communities to assure supplemental health services under disaster conditions. The material is contained in "Packaged Disaster Hospital Units" (PDH) and "Hospital Reserve Disaster Inventory Units" (HRDI). The P.D.H. consists of hospital supplies and equipment packed for long term storage. It can be used to expand the local hospital to which it has been assigned, or it can be set up as a separate 200 bed hospital in a predesignated building. The H.R.D.I. Units contain a 30 day supply of critical medical items used to supplement the inventory of existing hospitals. Presently, there are eighteen Packaged Disaster Hospitals prepositioned in Arkansas. During 1968, approximately 56 community hospitals will be contacted for affiliation with a Hospital Reserve Disaster Inventory or a Packaged Disaster Hospital. The number of new affiliations will depend on available storage space, personnel for staffing positions, and interest projected by the community hospital staff.

Packaged Disaster Hospitals, Hospital Reserve Disaster Inventories, and Health Mobilization Training Courses have greatly increased the health and medical resources of the State for disaster situations.

Part B-7—Health Resources of the State Emergency Resources Management Plan has been published and is in the process of being distributed to interested agencies and activities. This part of the plan establishes procedures for the Emergency Management of State Health Resources. Principally, this consists of determining the available source of supply, analysis of the demand, and determine priority assignment of resources to the most critical areas or agency.

Portions of the material contained in the Resources Plan have been incorporated into the proposed State Department of Health Emergency Health Service Plan. The proposed format, when reviewed by the United States Public Health Service, will supersede the Health Annex to the State Operational Plan, dated 1957.

The State Emergency Health Service Plan prescribes the policies, procedures, organization, function, staffing, and other factors governing emergency operation of the State Department of Health.

Implementation and operation of the plan will be directed by the State Health Officer and key staff personnel from their preassigned positions located in the Emergency Operation Center (EOC). The EOC will be beneath ground level in the new State Department of Health Building, now under construction in Little Rock.

The Center will be a self-sustaining facility capable of providing food, water, quarters, and working space for approximately 69 personnel for an extended period of time during emergency operations. This area will also be utilized as office space for the Divisions of Veterinary Public Health, Health Mobilization, and Meat Inspection for their normal day-to-day function.

In summary, disaster preparedness can be obtained only through complete cooperation of responsible agencies, and the understanding and action by the public.

The chairman apologizes to the committee and the Society for his inactivity caused by serious familial illnesses and three deaths during the past eight months.

#### **Committee on Liaison With the Nursing Profession**

Frank Padberg, M.D., Chairman

The Committee on Liaison with the Nursing Profession has functioned to some extent this current year. We have had meetings with the Arkansas State Nurses Association state planning group and another meeting at the winter planning meeting of the State Medical Society.

The Chairman of the Committee attended a report and planning meeting at the State Licensed Practical Nurses Convention as well as participated in a panel discussion at the Arkansas State Nurses Association Convention. The Chairman of the Committee also attended an A.M.A. Committee on Nursing meeting in October, 1967. This was an interesting meeting; delegates were present from most of the 50 states. This discussion centered around two primary topics—

A. Nursing education—plans, developments, the formation and number of programs.

- (1) The vocational trend, we were told, was toward the development of an associate of nursing degree program (2 years) and a 4-year degree program (both University rather than hospital orientated).
- (2) This, then, leading to the concept of a "PROFESSIONAL NURSE" or the "CLINICAL NURSE PRACTITIONER"; i.e., nursing as an independent professional group with the 4-year graduate nurse in charge, dealing with all manners of nursing, with the aid of the
  - (a) associate (2-year) program and also the
  - (b) nurse technicians.

The professional nurse would "round" on her patients, discussing nursing problems, feeding, hospital adjustment, and medications. One can think, then, of the professional nurse, possibly without specific hours, making her rounds, directing her helpers, and seeing "her" patients.

B. State-wide planning meets of nurses and doctors. Such meetings already held were discussed and a plea was made for such meetings to be held in all states.

The state-wide planning meetings have as their purpose developing closer relationships between the doctors and nurses.

For the present—

The registered nurses as a group desire an increase in their responsibilities and a more clear delineation of their duties. As an example—intravenous therapy and following the course of maternal labor, and use of the defibrillator. Many others are in the offering.

It is, then, obvious of the relationship between A and B above.

The Arkansas State Nurses Association nursing practice committee has already, as has been presented to the Council of the State Medical Society, suggested an outline of the dependent and independent nursing functions.

*My Personal Conclusions*

- (1) A state-wide nursing, hospital administration and doctors meeting should be planned and will be attempted this early spring, if possible.
- (2) All nursing training programs — all types — must be aided and supported. The M.D.'s, as such, must participate in this by teaching and giving of their time in the training of any of the nursing groups.
- (3) Arkansas needs, must have and must support the Licensed Practical Nurses. They, the L.P.N.'s, make up the largest nursing force— we as physicians must not let this program be bypassed by a college-based program of training.

**Sub-Committee on Traffic Safety***Louise Henry, M.D., Chairman*

The Traffic Safety Sub-Committee held two meetings in 1967. Special guests were: Major Bill Miller, Commander of Safety Division, Arkansas State Police; Dr. Kenneth Duzan of El Dorado, representing a committee appointed by the Governor; and Dr. Morrissey Henry, State Legislature, visitor.

Recommendations to the council by this sub-committee are:

1. That the Arkansas Medical Society endorse the Implied Consent Law. This was endorsed by the American Medical Association at the June 1967 meeting.
2. Re-emphasize the need for special training of ambulance personnel in the care of the injured.
3. Periodic re-examination of drivers for license.

**Sub-Committee on Physical Fitness and School Health***F. M. Henderson, M.D., Chairman*

The major activity of this committee is being directed in two major projects.

- A. The continuing pursuit to encourage all activity which is designed to prevent injury in Arkansas athletics.
- B. an effort to encourage and advance an expanded Health Education Program in the State School curriculum.

Plans are presently being completed for the first Arkansas Medical Society conference on Schools and Physicians. The meeting is to be held the last of April 1968, and will be planned as a biannual affair to alternate with the national conference.

This inaugural meeting is intended to bring physicians interested in Health Education together with School administrators to plan and develop the scope of the State's Health Education programs. This will include the school nurse role, Federal Title programs, medical diagnostic and treatment roles, diagnosis and follow up, immunizations, Health Education curriculum concept, sex education, family planning, Drug, Alcohol, smoking, V.D., Community and Public Health, personal hygiene and safety.

In association with this meeting is planned to include expansion of our present projects along with investigation of a bid method for an athletic insurance program.

**Sub-Committee on Tuberculosis***John C. Schultz, M.D., Chairman*

The Sub-Committee on Tuberculosis met at the Jefferson Memorial Hospital, January 12, 1968, with the following members present: Dr. Clyde Tracy, Dr. Paul Reagan, Dr. Joseph Shelton, Dr. Joe Scruggs, Dr. John Schultz and Ex Officio, Dr. Duane Jones. Dr. Jacob Ellis and Dr. James Cornett were present serving in an advisory capacity to the chairman. Guests present were Dr. Robert Jenkins of Pine Bluff and Dr. Robert Frazier of Denver, Colorado.

The purpose of the meeting was to discuss the experiment in private hospital care of tuberculosis patients as carried out in the Jefferson Memorial Hospital of Pine Bluff.

It was reported to the Sub-Committee that in six months 91 patients had been admitted, 62 patients had been discharged, and that there had been 18 participating physicians in the study. There were 64 patients who were admitted as new suspects, 10 patients were admitted as old patients for re-evaluation, 10 patients were admitted for the purpose of consideration of retreatment program and 2 patients had atypical disease status. Ultimately, the breakdown in patients has been 23 patients were diagnosed as tuberculosis sus-

pects, diagnosis pending and were discharged after an average stay of 19 days; 19 patients were ultimately diagnosed as new cases of tuberculosis with positive sputum and they had an average stay of 18 days. Nine of these 19 patients had far advanced tuberculosis. Of the 10 old patients admitted for re-evaluation, the average stay was 19 days. Nine patients were treated with second line drugs and their average stay was 53 days. The average state cost has been \$24 per patient day plus a physician care fee which is approximately  $\frac{1}{3}$  of the hospital cost. The gross cost has been approximately \$48 a day. The difference between the State cost and the gross cost is accounted for by third party payment and by partial private payment. The criteria for discharge was medical. It was pointed out that this region serves 18% of the tuberculosis case load for Arkansas and during the six months of operation of the Pine Bluff Hospital, only one patient had found it necessary to go out of the region for therapy of his tuberculosis.

The Sub-Committee voted that:

1. The Sub-Committee approves of the six months' project carried on at the Pine Bluff Jefferson Hospital and considers the project a success.
2. The Sub-Committee recommends the expansion of the private hospital treatment of tuberculosis to other regional centers on a trial basis.
3. The Tuberculosis Sanatorium should restrict its care to the management of cases and suspects of tuberculosis until a study demonstrating the demand for non-tuberculous chest care is performed.

It is the general feeling that this Sub-Committee has found it unfeasible to perform the study regarding the necessity of expanding the services at the Tuberculosis Sanatorium in order to justify the change in the character of the Sanatorium. All of the members of the Sub-Committee agreed that at this time such a study was not feasible.

The Sub-Committee realizes that a study was not performed and suggests that the State Medical Society office should be requested to send a letter to the physicians of Arkansas for a yes or no vote concerning the specific proposal, should the Arkansas Tuberculosis Sanatorium expand its services to include treatable chronic chest disease in

patients which are medically indigent and referred to the Sanatorium by their physician when there are beds available and not in use for the treatment of tuberculosis. It was also the feeling of the Sub-Committee that this referendum by the physicians of the state of Arkansas on this point would be of more value if the doctors would mark in a separate block whether they live in a city of 3,000 or less; 3,000 to 10,000; or 10,000 or greater.

It was the feeling of several members of the Sub-Committee, that such votes should be counted, either by Dr. Norton's office or by the office of a totally independent concern. The Sub-Committee members do not wish to cause any inconvenience for Dr. Norton but it was felt by several of them, however, that this represented a potentially politically explosive question and that the services of an independent concern might be well used. It was the final conclusion of the Sub-Committee that Dr. Schultz should discuss this point with Dr. Norton and if Dr. Norton desires, with the Council so that a decision can be made in this regard.

It was also the feeling of the members of the Sub-Committee that the votes taken at the meeting did not constitute a recommendation for the present closing of the Sanatorium.

#### **Immunizations Sub-Committee**

*Wilbur G. Lawson, M.D., Chairman*

The Immunizations Sub-Committee has been represented at State and County Society Meetings to encourage physician awareness of the need for perpetual vigilance in administering immunogens.

In conjunction with the Arkansas Chapter, American Academy of Pediatrics, a formulation of amendments to the new state school immunization law was prepared. These amendments were suggested for action by the Legislative Committee. Included were a need for making "currency" of immunization be important, need for making records perpetual and transferable from the school, need for permitting original doctors' certification cards to satisfy proof without a separate "official" certificate, need for accepting doctors' certification of having had the disease in lieu of vaccine record.

Meetings were held with Dr. Schmunes of the Arkansas State Department of Health to clarify and implement the methodology of public clinics for measles immunization. These were established as an activity to be asked for and assisted by option of the individual county medical society. It is reiterated that such clinics are a less desirable substitute for private management and should not be deliberately awaited by practitioners. Arkansas gained some national notoriety this past year by being one of the few states with more measles in 1967 than in 1966.

Approval was asked, and granted by the Council, to arrange information interviews on topical noontime interview shows, on television, to advance public demand for immunization. Due to a shortage of vaccine supplies available through public health facilities, however, it was decided that a campaign of this nature could not be justified until Public Health facilities could make the same materials available to all who need it. This is a project that should not be suspended indefinitely.

This being the final year of the Chairman's appointment, I wish to thank those officials of the State Health Department, the Council of the Arkansas Medical Society, and President Norton for their encouragement and assistance during our term.

#### **Committee on Insurance**

*Thomas D. Honeycutt, M.D., Chairman*

During the past year there has been one new insurance program inaugurated. Membership should be made aware of the experiences of the various insurance programs which the Arkansas Medical Society has.

The Group Plan of the Disability Insurance, administered by Rather Beyers & Harper, Little Rock, showed a participation of 380 physicians with a premium income of \$89,829.23 and claims paid to 34 individuals of \$39,972.83. There was an increase in the number of participants during the year.

The Group Plan of Professional Overhead Expense Insurance showed the number of policies in force 110, premium income \$19,754.95, amount of claims paid to 5 individuals \$6,547.23.

The Professional Catastrophe Liability Policy which was approved by the Insurance Committee and The Council of the Arkansas Medical Society was first made available in November of 1967. At the end of the year 35 members had availed themselves of these policies. This new addition to our insurance portfolio is to cover excess liabilities over usually held basic policies (Personal, Profession, and Contractual Liabilities).

The Professional Liability Program underwritten by the St. Paul Insurance Company continues to have good experience over the five years the Arkansas Medical Society has had a group contract with the company. Premiums written the first five years include \$50,372.00 for physicians and \$151,534.00 for surgeons, totaling \$201,906.00.

Incurred losses are \$27,880 for physicians and \$32,696 for surgeons, totaling \$60,566.00. This is a loss ratio of 30 percent on written premiums and 35 percent on earned premiums.

In insurance circles the break even point apparently is 50 percent losses of earned premiums. Maintaining losses in the range St. Paul has been able to do in its first five years attest to the fact that good underwriting techniques have been used and settlements have been appropriate.

The Company has not had any large claims and, of course, this cannot continue to be the experience of any company writing professional liability insurance. With the thought that eventually the company will have a large claim and especially since St. Paul only writes  $\frac{1}{4}$  of the physicians in Arkansas the large claim loss must be spread over a smaller group of policy holders, a modest rate increase would seem to be in order. Any proposed increase would still offer insurance below the Bureau rates.

To further spread cost between relatively low risk and high risk members it would seem advisable to create a class V, which the Bureau already has done. This will remove Anesthesiologists, Neurosurgeons, Ob-Gyn, Orthopedists, and Plastic Surgeons from Class IV and place them into

Class V.

As with any venture, volume can justify lower prices.

Participation in the Group Arkansas Medical Society Professional Liability Plan has shown

growth but much more slowly than hoped for at the inception of the plan, i.e., January 1, 1963, 53 physicians; January 1964, 150 physicians; January 1967, 197 physicians; January 1968, 306 physicians.

The Company feels the rate differential which became more apparent during 1967 accounts for the relatively good year in 1967.

The Arkansas Medical Society Group Life Insurance Plan was underwritten by Northwestern National Life Insurance Company with an effective date of August 1, 1959. Since this date over \$410,000 of benefits have been paid to beneficiaries and estates of persons insured under the plan.

Participation in the plan has steadily increased since the effective date. Approximately 40% of the eligible Doctors are presently participating in the Group Life Insurance Plan. More than \$6 million of life insurance protection is in force to protect the families of members of our Association.

The plan has paid a regular semi-annual dividend for many years. At the present time, all participating members receive a 9.3% semi-annual dividend on their premium.

In addition to the semi-annual dividend, Northwestern National voluntarily reduced the premium rate on all insured members under age 50 in 1965.

On two occasions, since the effective date, the Insurance Company has opened the enrollment of the plan to eligible members for an additional \$10,000 of insurance without evidence of insurability.

The plan has been serviced for many years by Meyer F. Marks, Inc., 401 Commercial National Bank Building, Little Rock, Arkansas. Service will continue to be provided by the same firm, although in 1967, we all lost a friend by the death of Meyer Marks after a lengthy illness.

New members of the Arkansas Medical Association are allowed the privilege of purchasing up to \$20,000 of group life insurance without evidence of insurability if they enroll within 120 days of joining the Society. Information is forwarded to each new member so they can take advantage of the plan.

**IN SUMMARY:** The Group Insurance Programs seem to be serving well those members of the Society who have chosen to enter into these programs. It is particularly desirable at this time to enroll more members in the Professional Liability Program since this is one type of insurance which is constantly rising in price and for a company to be able to serve the Medical Society on a group basis volume is the major element in holding down prices.

Physicians interested in any of these programs may contact for Group Disability and Professional Overhead Expense and Catastrophe Liability, Rather, Beyer & Harper, 223 Louisiana Street, Little Rock, Arkansas 72201; Professional Liability, The St. Paul Insurance Company, Mr. Ed Hodges, 1515 West 7th Street, Little Rock, Arkansas 72201; Group Life Insurance, Meyer F. Marks, Inc., 401 Commercial National Bank Building, Little Rock, Arkansas 72201.

#### **The Twenty-One Man Medicare Committee**

C. C. Long, M.D., Chairman

One meeting of the full Twenty-one Man Committee was held during the year, on September 10, 1967. At that time, a report on the twelve-month experience was presented to the group listing the number of bills received, the amount of paid out monies for the Part B Medicare and further statements concerning the operation of the program. Blue Shield reported that during the first year they paid a total of \$4,820,000 for in-patient and out-patient care. They further stated that fifty to sixty percent of the physicians in the state were accepting assignments. They also reported that their experience with the claims submitted had been very good, that the percentage of claim forms returned for additional information had been relatively small.

Dr. Farris, medical consultant for Blue Shield, reported on some of the problems that he had encountered in okaying the medical claims.

A Five-Man Committee was appointed by the Twenty-one Man Committee as outlined in the previous program. This committee was to consist of the Executive Committee of the State Society plus the chairman of the Twenty-one Man Committee. This Five Man Committee will be able to have more flexibility and to meet more often

in working out some of the above listed problems.

Following this meeting and discussion of the Medicare problems, a discussion was held regarding the resolution passed in the last annual session of the House of Delegates concerning the full payment of usual and customary physician's fees by Blue Shield. The plan was discussed and Blue Shield stated that they were making every effort to offer such a contract in the near future to the people in the state of Arkansas. In preparation for this offering Blue Shield is requesting that a survey form of physician's usual and customary fees would be sent to all physicians so that an average of the fees charged could be obtained to help in the pricing of the proposed contract. This was presented as information only; no action was taken.

The chairman of the Twenty-one Man Committee feels that during the past year this committee has not been as active as he would have hoped it might be. However, the committee has stood ready at all times to be of assistance in the direction of the program as operated by Blue Cross-Blue Shield. He also feels that there are many problems which should be considered. It is hopeful that in the near future the Five-Man Committee can discuss these problems and bring them to the entire group for consideration and discussion in a way in which was originally planned that this group would function to help in the formation of policy, making of decisions and the control of Part B of the Medicare Program.

#### **Sub-Committee on Liaison With Vocational Rehabilitation**

*Paul G. Henley, M.D., Chairman*

The Liaison Committee met on January 31, 1968 in Hot Springs, Arkansas.

The Committee regrets to report that it has lost its most capable and energetic chairman, Dr. Drompp.

It is evident that one of the problems the Committee has is to establish better communications between the Arkansas Medical Society and the Rehabilitation Service. The Committee recommends that each member of the Arkansas Medical Society become better acquainted with at least the fundamentals of the Rehabilitation Service.

It is noted that approximately one of every four doctors is active in the Rehabilitation Service in Arkansas. The Service expressed its concern to expand its relationship with more doctors.

Mr. L. H. Autry, Director of the Rehabilitation Service for the Blind, encouraged the Committee to inform the Arkansas Medical Society of its role in the care of the blind in the state of Arkansas. It was primarily through his efforts that certain legislation detrimental to the best interests of the blind and of the Arkansas Medical Society was defeated.

Mr. Russell Baxter, Director of the Arkansas Rehabilitation Service, spoke to the Committee and expressed his appreciation for the cooperation between the Arkansas Medical Society and the Rehabilitation Service. He expressed his desire to keep the medical profession informed by any method available of the activities of the Service, and of the changes as they are initiated.

Among the changes the Rehabilitation Service considered advisable during the past year, and in cooperation with the Arkansas Medical Society, was the initiation of a "usual and customary fee schedule." He reported that the doctors of Arkansas have fully cooperated with this change and that both the Rehabilitation Service and the Arkansas Medical Society are well pleased with the arrangement.

Mr. Baxter also reported that during the past year 5,300 major surgical procedures were authorized by his Department. In addition, numerous medical services, diagnostic procedures, and prosthetic appliances were secured through physicians.

Mr. Baxter also reported that all funds for new medical cases, with a few specific exceptions, have been depleted for this fiscal year. This is not unusual and Mr. Baxter explained that it was not due to the initiation of the "usual and customary charges schedule."

One of the most pressing problems found by the Committee, and concurred by Mr. Baxter, is the point of "eligibility" as understood by many physicians. Some criticism has been directed at the Medical Society and the Rehabilitation Service (as previously reported). The Committee would like to emphasize that eligibility for vocational rehabilitation services is not limited to medical problems. Many factors enter into determining eligibility. The criteria for eligi-

bility is decided by the State Rehabilitation Service along with guidelines of the Federal Government.

The Committee recommended that the Rehabilitation Service set up an educational exhibit at the spring meeting of the Arkansas Medical Society if at all possible.

At the suggestion of the committee, the Arkansas Rehabilitation Service has published an attractive and informative new brochure on the Rehabilitation Service.

#### **Annual Session Committee**

**Harry Hayes, Jr., M.D., Chairman**

The Committee has had two meetings over the past year plus innumerable small conferences. The Committee decided to approach a single Medical Center to provide all the speakers for the scientific portion of the annual meeting. The New York Hospital—Cornell Medical Center, was contacted and they agreed to supply all the speakers. A list of the men who accepted this invitation has been sent to you, under separate cover, along with a tentative schedule for the talks. Certain of the specialty groups within the Medical Society have been contacted and have been offered the services of the various speakers from Cornell where their specialty was represented by one of the speakers.

Dr. Hermie Plunk of Jonesboro was contacted and has agreed to provide the entertainment for the banquet at the meeting.

Various other details to insure the smooth functioning of the entire program have been worked out.

#### **Committee on Medicine and Religion**

**Jerome S. Levy, M.D., Chairman**

The committee on Medicine and Religion met on three occasions during the year, the last being on the occasion of the meeting of the officers of the County Medical Society in Little Rock on December 16. The discussions have centered on how the program can be stimulated into an active one within the state. It is the committee's recommendation that the individual county societies put on local programs in which the state committee would be pleased to participate or would cooperate in programming upon request. However, the respective county society committee chairmen have not made any requests.

We have sent letters to the different chairmen offering our assistance and suggesting types of programs. We have also asked the councilor of each councilor district to attempt to organize the chairmen of the different component societies committees within their councilor district in an effort to have a program at the councilor district level. However, we have not had any response from the councilmen and the program has not made any progress.

At a second meeting, Bob Etheridge, of the American Medical Association, Department of Medicine and Religion, discussed at length the type of program which could be instituted within the state. Bob Etheridge has attended our meetings and has been most cooperative and we wish to express our thanks to him. An advisory committee of five clergy of Pulaski County has been set up as a non-official committee to advise us and their suggestions have been fruitful. At the present time, St. Vincent Infirmary is planning to invite the clergy of Pulaski County to the March Staff Meeting at which time, a program on Medicine and Religion will be held. The Infirmary is going to have the clergy meet earlier for a tour of the hospital and explanation of the functioning of the hospital so that each of the clergy will be aware of hospital routine and what they can do to participate when called upon to see their parishioners. We anticipate to follow this with a meeting at the Arkansas Baptist Medical Center Hospital. Should this prove the success we anticipate, we will have another comparable meeting in the fall of the year at the University of Arkansas School of Medicine to which the students would be invited.

I feel some disappointment that we have not had more active programs already instituted but hope to have a meeting under the auspices of the University of Arkansas School of Medicine in February or possibly early March comparable to the one held last year. We are open to any suggestions that the members of the State Medical Society would have and I am taking this means to ask for such suggestions.

**Arkansas State Advisory Committee to the  
Selective Service System**

Gerald H. Teasley, M.D., Chairman

The Medical Advisory Committee To The Selective Service System of Arkansas had a moderate amount of work to do this past year. At present, no calls are on hand for medical officers in either of the services.

It is not known what the status will be three to six months from now. It is expected that some physicians will be asked to go on active duty, and that the committee will have to report on their availability for service. In order to relieve the members of the committee from each councilor district from taking all the responsibility for determining the availability, the local Medical Societies will participate in action that is taken according to requests that have been issued at an earlier date. The cooperation and understanding of all members of the Medical Society are requested.

**Report of the Arkansas State Medical Board  
January 1, 1967—January 1, 1968**

Joe Verser, M.D., Secretary

The Secretary of the Arkansas State Medical Board makes the following report of the activities of this Board since the last meeting of the Arkansas Medical Society:

The officers and members are as follows:

Wm. A. Snodgrass, Jr., M.D., Chairman  
J. F. Guenther, M.D., Vice-Chairman  
Joe Verser, M.D., Secretary-Treasurer  
Frank M. Burton, M.D.  
Hugh R. Edwards, M.D.  
Earle D. McKelvey, M.D.  
Ross Fowler, M.D.  
George F. Wynne, M.D.  
C. Stanley Applegate, M.D.  
Eugene R. Warren, Attorney

A yearly financial report of the Board's activities, prepared by Johnston, Freeman & Company, Certified Public Accountants, was sent to and approved by the Council of the Arkansas Medical Society.

The Board investigated every case of violation of the Medical Practice Act reported to the Secretary during the year. Following is a summary of the Board's proceedings.

Physicians registered for 1967:

Resident	1,640
Non-Resident	1,120
Physicians licensed by examination	88
Physicians licensed by reciprocity	24
Physicians certified to other states	101
Licenses revoked for non-payment of annual registration fee	14
Licenses suspended for non-payment of annual registration fee	33
Physicians license revoked for violation of the Medical Practice Act	3
Physicians placed on probation	5
Injunctions obtained	2
Criminal convictions obtained for practicing medicine without a license	3
Cases pending in court for practicing medicine without a license	3
Pending investigations for practicing medicine without a license	4

A financial statement prepared by Johnston, Freeman & Company, Certified Public Accountants, is attached.

**FINANCIAL REPORT**

For Calendar Year 1967

For January 1, 1967-January 1, 1968

Cash in bank—January 1, 1967	
Checking	\$ 4,312.44
Time certificates	22,853.70
	\$27,166.14
<b>RECEIPTS:</b>	
Registration fees	\$ 8,052.00
Certification fees	1,590.00
Reciprocity fees	4,100.00
Examination fees	4,987.50
Directories	390.00
Physical therapy fees and dues	364.00
Medical corporation fees and dues	280.00
Interest on time deposits	1,028.41
Miscellaneous	644.50
	21,436.41
<b>TOTAL CASH AVAILABLE</b>	\$48,602.55

**DISBURSEMENTS:**

Salaries, FICA taxes, Board members' fees and expense	\$11,134.78
Attorney fees, expenses and investigations	432.01
Dues and expenses to Federation of State Boards of the U. S.	400.00
Office rent, supplies, printing, telephone and postage	3,180.35
Refund of fees	210.00
Auditing	175.00
Miscellaneous	291.50
	15,823.64
Cash in bank—December 31, 1967	
Checking	\$ 8,896.80
Time certificates	23,882.11
	32,778.91

**Committee on Mental Health**

W. O. Young, M.D., Chairman

The Sub-Committee on Mental Health met during the fall of 1967, discussed the activities that the Committee continues to be engaged in from last year, and felt that the Arkansas Medical Society should be involved in two more additional projects that were proposed at the time of the Sub-Committee meeting.

The Sub-Committee voted that the Arkansas Medical Society should co-sponsor, with the Arkansas Bar Association and the Arkansas Mental Health Association, a seminar for judges, attorneys, and law enforcement officials, on the problems of the psychiatrically ill legal offenders and the problems of treating them. This seminar will be held at the Arkansas State Hospital during the spring of 1968. The Sub-Committee also voted for the Arkansas Medical Society to sponsor a series of seminars on pastoral counseling for the clergy of the State. We felt this should be in a neutral institution and, again, voted to use the facilities of the Arkansas State Hospital for this seminar. Part of the staff of the State Hospital is already working on a series of lectures of this type, and the Superintendent felt that this could work in with their own program.

Members of the Sub-Committee have continued to be active in mental health activities in the State. Some members of the Sub-Committee have continued to work in the Citizen's Committee to try to combine the Comprehensive Mental Health Plan and Comprehensive Mental Retardation Plan into one plan. They have not been able to completely combine the two plans. In the 1967 meeting of the State Legislature, the Mental Health Authority was transferred from the State Health Officer to the Superintendent of the Arkansas State Hospital. This is the office which is authorized to receive Federal funds for mental health purposes and is part of the Comprehensive Mental Health Plan that was worked out about two years ago. During the summer of 1967 Dr. George Jackson, Superintendent of the Arkansas State Hospital, appointed Dr. Lee Sewall to help in the establishment and control of mental health clinics to be set up throughout the State. This, too, is in line with the Comprehensive Mental Health Plan that was proposed. The Legislature also voted to move all the tubercular patients

from the McRae Sanitarium to the State Sanatorium at Booneville and to turn the physical plant at McRae Sanitarium over to the Arkansas Children's Colony for use in the treatment and care of the mentally retarded. This, again, was one of the points in the Comprehensive Mental Health Plan.

There continues to be increased effort and interest in the establishment of local mental health clinics. A comprehensive mental health clinic is in the process of being established in Little Rock at the Arkansas State Hospital grounds and another is in the process of being established in Jonesboro. Several other communities in the State are working on the details of trying to establish mental health clinics. In this, they are being supported by Dr. Sewall from the State Hospital Organization.

The residency programs in psychiatry in the State have continued to enlarge and to improve. The three institutions are cooperating very closely in the training of residents, and we are moving toward a more adequate supply of psychiatrists for the people of the State of Arkansas.

The seminars for training physicians in psychiatric theory and practice, which was established at the Medical School under the Department of Psychiatry about three years ago, has continued to be very popular and successful. The Department of Psychiatry has also held seminars in various parts of the State for County and District Medical Societies and these have been well received and quite popular.

The above programs by various sections of the State Government and State Institutions are things that have been advocated by the Sub-Committee on Mental Health State Medical Society for several years. Our Committee feels that this indicates that most of the physicians who work in mental health, whether in private practice or in an institution, agree on the primary goals for the people of Arkansas and are all working together to try to achieve these. It is most important that every physician, whether he is actively involved in some mental health program or not, should be well acquainted with what is going on in the State in this field and give it his fullest support.

**The Advisory Committee to the  
Woman's Auxiliary**

Ross Fowler, M.D., Chairman

The entire membership of the Sub-Committee on Liaison with Auxiliary met and drew up a resolution approving the Auxiliary dues being paid with the medical dues.

This resolution was presented and approved by the Council.

No other business has been transacted.

**Sub-Committee on Liaison With  
Blue Cross-Blue Shield**

James R. Morrison, M.D., Chairman

This Committee has been inactive during the year 1967. In view of the 21 Man Committee that deals directly with Blue Cross-Blue Shield in Arkansas, it is recommended that this Sub-Committee on Liaison with Blue Cross-Blue Shield be abolished.

**Budget Committee**

W. R. Brooksher, M.D., Chairman

The Budget Committee submitted the following budget for 1968. It has been approved by the Council.

**INCOME**

Budget Item	1968 Estimate
Membership Dues	\$ 90,060.00
Journal Advertising	
Local	\$ 5,000.00
National	26,000.00
Total	\$ 31,000.00
Booth Income	6,900.00
Annual Session Income	1,800.00
AMA Reimbursement	800.00
Income from Medicare	15,521.00
Miscellaneous and Rosters	250.00
Interest on Government Securities	4,500.00
Retirement	306.00
	<u>\$151,137.00</u>

**EXPENSES**

Salaries	
Journal	11,351.00
AMS	36,345.00
	47,696.00
Travel and Convention	10,000.00

Taxes

AMS

1,500.00

Retirement

AMS

5,496.00

Stationery & Printing

AMS

1,100.00

Office Supplies & Expense

AMS

2,000.00

Telephone & Telegraph

AMS

2,200.00

Rent

AMS

2,556.00

Postage

AMS

3,600.00

Insurance & Bonds

AMS

2,113.00

Auditing

Medicare

600.00

AMS

400.00

1,000.00

Council

1,200.00

Journal Printing & Expenses

28,000.00

Annual Session

7,000.00

Senior Medical Day

850.00

Public Relations

500.00

Dues & Subscriptions

2,000.00

Contributions & Gifts

1,900.00

Woman's Auxiliary

1,200.00

Legal Service

2,300.00

Special Committee

2,250.00

Rural Health

500.00

Miscellaneous

100.00

Freight & Express

100.00

Office Equipment

\$127,161.00

### Report of the Executive Vice President

Mr. Paul C. Shaefer

The year 1967 brought great changes in the responsibilities of the headquarters office. The Military Medicare program, administered by the Society, was greatly expanded by the addition of military retirees and their dependents. The regulations of the new program were infinitely more complex. The major part of the year was spent recruiting personnel and adding office space and equipment to handle the program. In October the decision was made to withdraw the Society from the program and the remainder of the year was spent turning the administration of Medicare over to Blue Cross-Blue Shield.

1967 saw the full impact of over-65 Medicare take effect in the state. The recently established liaison with the Welfare Department came to fruition during 1967 through the payment to doctors for care of welfare patients. Such care had, historically, been donated by the physicians of Arkansas. The comprehensive health planning law and the regional medical programs became effective during the year. State society liaison with vocational rehabilitation was improved.

1967 was a year of intensified work with Blue Cross-Blue Shield for the establishment of usual and customary fee profiles for the government programs handled by that organization. In addition, great effort was expended attempting to establish a Blue Cross-Blue Shield usual and customary coverage for the general population who purchases insurance privately.

Keeping track of, and working with, the government programs instituted in the last two years is enough to keep the headquarters staff occupied full time even if long established programs and duties of the Society were ignored.

The Arkansas Medical Society and the American Medical Association have been remarkably effective in effecting modifications in the government programs for the benefit of patients and physicians. Such developments as the simplified over-65 Medicare claim form, usual and customary fees and removal of necessity for recertification for hospital stays are but a few examples of the good work done by medical societies for their members. These achievements are to the credit of the Council, the Executive Committee of the Council and the committees of the Society. A

great deal of time, travel and sacrifice were required of them.

As the past year was a period of almost violent adjustment in the headquarters office, the years ahead will test its adaptability. The strength and cohesiveness of the medical profession, as well as the adaptability of the Society headquarters, will be tried to their limits. Accommodation to the new laws will not be accomplished without compromises and distasteful adjustments.

The new Internal Revenue Service regulations decreeing taxes on Journal advertising, exhibit booths and other income will severely handicap the Society. Even if it develops that no great amount of tax is due, the extra record keeping will involve considerable expense and trouble.

The fact that Medicare is now law and that Title XIX is on its way to Arkansas does not mean that the Society or its headquarters no longer needs to worry about legislation. The planners, convinced that they have the financing of medical care arranged, are now turning to the method of delivery of medical care. Presumably it is planned to tell physicians where to practice and how, and to divide up the practice of medicine between physicians and ancillary groups.

The government, through the Internal Revenue Service, weakens medical organization at a time when the Society's need for strength has never been greater. The challenge must be met with greater effort and dedication to cooperative action as a group. The headquarters staff looks forward to doing its best in assisting the House of Delegates, the Council and the other elements of the Arkansas Medical Society.

### Report of the Council

T. E. Townsend, M.D., Chairman

The Council of the Arkansas Medical Society met Sunday, August 13, 1967, and transacted the following business:

- I. Approved coverage for members of the Arkansas Medical Society by a Personal Catastrophe Liability Insurance Program offered by Rather, Beyer and Harper, insurance agency, through the Society's Insurance Committee.

- II. Received advice by legal counsel that the Society should request the Governor to make appointments to the Arkansas State Cancer Commission from nominees submitted by the Society in accordance with the law.
- III. Approved increasing the Medical Society's share of the salary of the Journal editor's part time secretary.
- IV. Council was advised by Dr. James Kolb, delegate to the AMA, that he would not be a candidate for re-election to that position.
- V. Decided to purchase libel and slander insurance policies covering advertising and editorial matter in the Journal of the Arkansas Medical Society.
- VI. Authorized the chairman of the Council to appoint a committee to work with Dr. Whittaker and the Executive Committee to study the desirability of appointing a committee for the correlation of government plans.
- VII. Approved action by the Executive Committee authorizing purchase of a calculating machine and a check signer for the headquarters office, which had not been included in the budget approved earlier.
- VIII. Rejected a contract offered by the Veterans Administration carrying with it a fee schedule based on a \$5 unit value. The fee schedule committee was asked to negotiate with the Veterans Administration on the basis of usual and customary fees.
- IX. Adopted a resolution commending Congressman Wilbur Mills for his services to the state and nation.
- X. Adopted a resolution on rural traffic accidents urging upgrading of rural emergency service.
- XI. Received notice from the Department of Defense that the contracts of state medical societies to administer the Military Medicare program would not be renewed. The renewal date in Arkansas being March 31, 1968, the Council voted to request termination of the contract at the earliest possible date.

- XII. Decided to pay the expenses of one representative to a conference on abortions to be held in Washington, D. C.

The Council met on October 14, 1967, and transacted the following business:

- I. Approved Executive Committee actions as follows:
  - (A) Dissolved all fee committees and designated a 21-Man Committee as a fee committee to negotiate all fee arrangements with third parties.
  - (B) Appointed Dr. Whittaker as chairman of a Committee for Correlation of Government Plans. The committee is to be composed of:
    - (1) Appointees to government committees such as the Governor's Efficiency Committee, the Advisory Committee on Regional Health Programs and the Advisory Committee on Comprehensive Health Planning and other agencies;
    - (2) Dr. T. A. Feild of Fort Smith and Dr. Jerome Levy of Little Rock.
    - (3) The Executive Committee of the Council of the Arkansas Medical Society.
- II. The Council decided to issue an invitation to the chairman of the Public Relations Committee to attend all future council meetings.

The Council met on October 15, 1967, and transacted the following business:

- I. The Council voted to appropriately recognize Miss Leah Richmond's 15th anniversary with the Arkansas Medical Society and to present her with an appropriate gift in recognition of her efficiency and devotion to duty.
- II. Mr. Warren reported that the Governor's office had stated that an appointment to the State Cancer Commission had been made in error and that the matter would be adjusted in accordance with the law.

- III. Dr. Levy reported on the progress of the new Committee on Medicine and Religion, stating that he had attended a meeting in Kansas City on committee business. Council approved expenses for the trip.
  - IV. Council approved a "Question and Answer" sheet submitted by Blue Cross-Blue Shield for distribution to all physicians to assist in the establishment of a usual and customary fee for each doctor.
  - V. Received a report from President Norton that the Vocational Rehabilitation Service had agreed to pay physicians' usual and customary fees.
  - VI. Dr. Charles Henry reported on his attendance at a seminar on abortions held in Washington, D. C. The Council voted that the Society should not take an official position on the subject of abortions. It was voted to authorize the Chairman of the Legislative Committee to call on Society members to assist the Legislative Council in considering any legislation on the subject, either as witnesses before the Legislative Council or otherwise.
  - VII. Voted to authorize necessary funds for a function at the meeting of the American Medical Association in San Francisco in June 1968 to honor Mrs. C. C. Long when she is installed as President of the Woman's Auxiliary to the American Medical Association.
  - VIII. Approved a proposed State Health Department memorandum to go to all physicians dealing with the prevention of Rheumatic Fever and offering the services of the Health Department's laboratories.
  - IX. Elected Dr. Wayne Lazenby of Dumas as Councilor of the Fourth District to succeed Dr. Lee Parker who had moved from the district.
  - X. The Council was advised that it appeared that the Defense Department might rescind its order to terminate medical society contracts to administer Military Medicare. After a review of the developments in the program, the Council voted to reiterate its decision to terminate the Medical Society's responsibility for the Military Medicare program.
  - XI. Directed the Chairman of the Council to select representatives to send to the American Medical Association conference in Chicago on Planning for Health Care of the Poor.
  - XII. Voted to approve changes in the ARKPAC constitution, directing that members of the Board of Trustees of ARKPAC be selected by the Council of the Arkansas Medical Society.
  - XIII. Voted to recommend to County Medical Societies that their annual dues billing to members include a bill for ARKPAC dues.
  - XIV. The Council requested legal attorney to work with Dr. Padberg on the legal and legislative aspects of defining the limits of nurse activities in patient care.
  - XV. Took note of Dr. Richard Logue's diligent work as Chairman of the Professional Relations Committee in attempting to settle a dispute between two members of the Medical Society.
  - XVI. Directed that all County Medical Societies be advised that the State Health Department is ready to carry out an immunization program. The County Medical Societies are to be asked to take the leadership in such programs.
- The Council met at the Hotel Sam Peck in Little Rock at 12 o'clock, Sunday, February 18, 1968. Business was transacted as follows:
- I. Elected Dr. H. W. Thomas to the Board of the Arkansas Medical Society Employees Pension Trust.
  - II. Decided to purchase a gift for Mrs. C. C. Long to commemorate her taking office as President of the Woman's Auxiliary to the American Medical Association. The chairman of the Council was directed to appoint a committee to select a gift which will be presented to Mrs. Long at the Annual Session of the Arkansas Medical Society in Hot Springs.
  - III. Elected Dr. David Gibbons of Ozark to the Tenth Councilor District Professional Relations Committee.

- IV. Dr. Saltzman presented the proposed budget for 1968. After a discussion of the new income tax on "non-related business", the Council voted to approve the budget as presented.
- V. The Council voted to accept and approve the Report of Audit.
- VI. Voted to ask the Dean of the Medical School to present an annual report to the Society for its consideration at each annual session in the future, the report to be considered as a regular committee report.
- VII. The Council voted to continue to publish the Tuberculosis Abstracts with no increase in cost to the Tuberculosis Association.
- VIII. Dr. Norton stated that the Confidential Register of Professional Charges constituting a survey of usual and customary fees by each physician had not been completed and returned by many of the doctors of the state. He urged that everyone complete his survey and return it to Blue Cross-Blue Shield. Mr. Elliott pointed out that the information would be taken from the Confidential Register and placed on IBM punch cards and that the doctor could have his register returned to him.
- IX. Dr. Muckleroy briefly described the Rehabilitation Program and asked for the co-operation of all physicians in the reporting of any incidents which did not meet with a physician's approval.
- X. There was considerable discussion of the importance of having a board representation of physicians in private practice on the Board of Trustees of Blue Cross-Blue Shield. It was the consensus of the Council that steps should be taken to insure that membership on the board did not become fixed and that the goal of the Medical Society should be the best possible representation on the Blue Cross-Blue Shield Board, and that geographical distribution of the board membership should be of secondary importance. The Council further felt that any physician serving on the board should be in active private practice.

Dr. Townsend called the attention of the Council to the fact that Dr. George Mitchell, a Medical Society member of the Board of Trustees, had taken a position as full-time medical director for Blue Cross-Blue Shield and that a successor on the board should be elected. Dr. C. C. Long was elected to fill the unexpired term of Dr. Mitchell on the Board of Blue Cross-Blue Shield.

- XI. Dr. Townsend called on Dr. Merlin Kilbury, Jr., who discussed the confusion in the Governor's office over an appointment to the Cancer Commission. Dr. Kilbury expressed deep interest in the work of the Cancer Commission and requested that he be considered for a place on that body. Dr. Townsend assured him that the Council was gratified by his request and that he would receive consideration for the next vacancy.
- XII. Mr. Warren advised the Council that he was working on legislation to be introduced at the 1969 session of the Arkansas Legislature, which would designate the transfusion of blood as a service and not as a commodity.
- XIII. Mr. A. M. Edwards of the American Medical Association and Dean Shorey discussed the functioning and the needs of American Medical Association education and research foundation.
- XIV. After a discussion of the AMPAC board meeting in Washington, D. C., March 9th and 10th, the Council voted to request the chairman of the Council to appoint delegates from Arkansas to attend.
- XV. Chairman Townsend read a letter from Dr. Robert Watson regarding an apparent misunderstanding on the part of the Crippled Children's Division with regard to paying usual and customary fees. The letter was received for information.
- XVI. President Norton read a letter from Dr. Ed Barron, the physician for the State Prison system. The letter expressed Dr. Barron's appreciation for the Medical Society's interest in assisting with the prison

system. The Council voted to have the chairman of the Council write to Dr. Payton Kolb as a member of the prison board, offering the assistance of the Society.

- XVII. President Norton read a communication from the Arkansas Drug Use Control Study Commission of the Arkansas Association of Hospital Pharmacists. The letter proposed tight controls on hospitals' pharmacies, requiring that they be operated by licensed pharmacists. The Council voted not to sign an agreement, which was enclosed, but to ask the chairman of the Council to appoint a small committee to meet with the pharmacists and Hospital Association to see if the problem could be worked out cooperatively by the three organizations.
- XVIII. Voted to send a delegate to the American Medical Association Socio-Economics Conference in Chicago, chairman of the Council to designate the delegates.
- XIX. Voted to approve expenses and travel for Dr. Chudy and Dr. Price to attend a meeting in New Orleans.

**Proposed Amendment to the  
Constitution and By-Laws**

*Final Reading*

First House of Delegates

April 21, 1968

Amend Chapter XI of By-Laws to make present Chapter IX Section 1 and add as Section 2 the following:

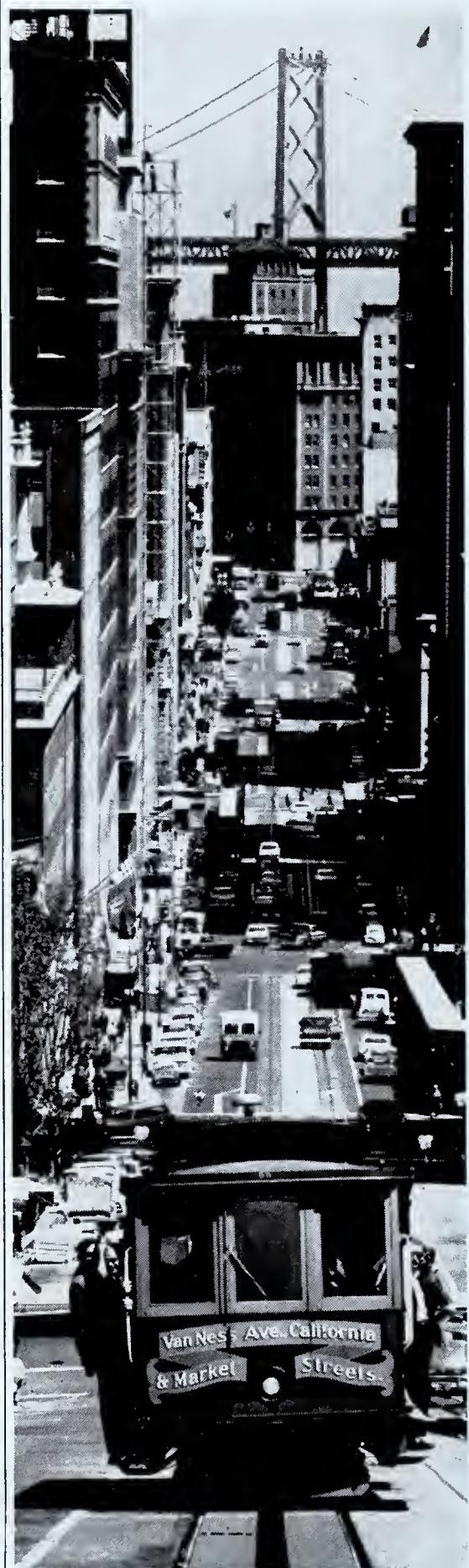
Chapter IX, Section 2

All items expected to be considered at the Annual Meeting of the House of Delegates of this Society must be printed in the Journal of the Arkansas Medical Society in the month preceding the Annual Meeting. All resolutions to be submitted to the House of Delegates at the Annual Meeting must be received in the office of the Executive Vice President twenty days prior to said meeting. Any new business proposed during the first session of the House of Delegates of this Society must have a two-thirds majority of the attending delegates voting for such introduction into this Session. Any new resolutions or other new business proposed for introduction to this House of Delegates after the first session in each Annual Meeting must have two-thirds consent of attending delegates before its introduction.



## *Golf Tournament*

The Golf Tournament will be held at the Belvedere Country Club. D. B. Stough, III, M.D., of Hot Springs is chairman of the Golf Tournament Committee. Members may play anytime Sunday, Monday and Tuesday. Physicians are to register with the pro. Prizes will be awarded. Dr. Stough urges members to bring their golf clubs and participate in the tournament.



# SAN FRANCISCO AMA '68

The excitement of San Francisco's famous sites is waiting for you. Chinatown, the Golden Gate Bridge, Fisherman's Wharf, Telegraph Hill, will add to five memorable and stimulating convention days. Plan to attend now and look forward to an excellent convention in a city of unlimited charm.

Continue your postgraduate education with a varied program of • four General Scientific Meetings on Auto Accidents, Health Care Planning, Infectious Diseases, Treatment of Advanced Malignant Disease • 23 Section Programs • Color Television • Medical Motion Pictures • and over 600 scientific and industrial exhibits. All are designed to bring you up-to-date on what is making medical news today. You will attend lectures by the nation's outstanding medical authorities and discuss with them the significant advances in medicine.

In addition the AMA TV network will present more than 40 hours of convention news.

Reserve now for the Scientific Awards Dinner in honor of the Scientific Award Winners—Wednesday, June 19, 1968. Since space is limited, we suggest you make your reservations before June 3, 1968. Tickets are \$10.00 each, payable in advance.

The complete scientific program, plus forms for advance registration and hotel accommodations, will be featured in JAMA, May 6, 1968.

**SAN FRANCISCO, CALIFORNIA · JUNE 16-20, 1968**

**AMERICAN MEDICAL ASSOCIATION'S 117th ANNUAL CONVENTION · BROOKS HALL**

April, 1968

# THE JOURNAL OF THE *Arkansas* MEDICAL SOCIETY

Vol. 64 No. 11

FORT SMITH, ARKANSAS

92nd ANNUAL SESSION  
Arkansas Medical Society

ARLINGTON HOTEL, HOT SPRINGS, APRIL 21-24, 1968



U.C. MEDICAL CENTER LIBRARY

MAY 7 1968

San Francisco 94122

Information available to physicians upon request.  
Eli Lilly and Company, Indianapolis, Indiana 46206.

800207



# Dilantin®

(diphenylhydantoin)

PARKE-DAVIS

**In untold thousands of  
epileptic patients...  
Dilantin has been, and  
continues to be, the  
bedrock of therapy.**

DILANTIN is useful in the treatment of grand mal epilepsy and certain other convulsive states. Its use will prevent or greatly reduce the incidence and severity of convulsive seizures in a substantial percentage of epileptic patients, without the hypnotic and narcotizing effects of many anti-convulsant drugs.

**PRECAUTIONS:** Periodic examination of the blood is advisable. Nystagmus in combination with diplopia and ataxia indicates dosage should be reduced. The possibility of toxic effects during pregnancy has not been explored. **ADVERSE REACTIONS:** Allergic phenomena such as polyarthropathy, fever, skin eruptions, and acute generalized morbilliform eruptions with or without fever. Rarely, dermatitis goes on to exfoliation with hepatitis, and further dosage is contraindicated. Gingival hypertrophy, hirsutism, and excessive motor activity are occasionally encountered. During initial treatment, side effects may include gastric distress, nausea, weight loss, nervousness, sleeplessness, feeling of unsteadiness. Macrocytosis, megaloblastic anemia, leukopenia, granulocytopenia, thrombocytopenia, pancytopenia, agranulocytosis, and aplastic anemia have been reported. Nystagmus, lymphadenopathy, lupus erythematosus, erythema multiforme (Stevens-Johnson syndrome), and a syndrome resembling infectious mononucleosis with jaundice have occurred. DILANTIN is supplied in several forms including Kapseals® containing 0.1 Gm. and 0.03 Gm. diphenylhydantoin sodium.

Parke, Davis & Company, Detroit, Michigan 48232

The color combinations of the banded capsules are Parke-Davis trademarks. The orange-banded white capsule identifies Parke-Davis 0.1 Gm. diphenylhydantoin sodium; the pink-banded white capsule 0.03 Gm. diphenylhydantoin sodium.

**PARKE-DAVIS**

015R67

# **BSP® DISPOSABLE UNIT**

**HW&D BRAND OF SODIUM SULFOBROMOPHTHALEIN INJECTION, USP**

(50 mg. per ml.)

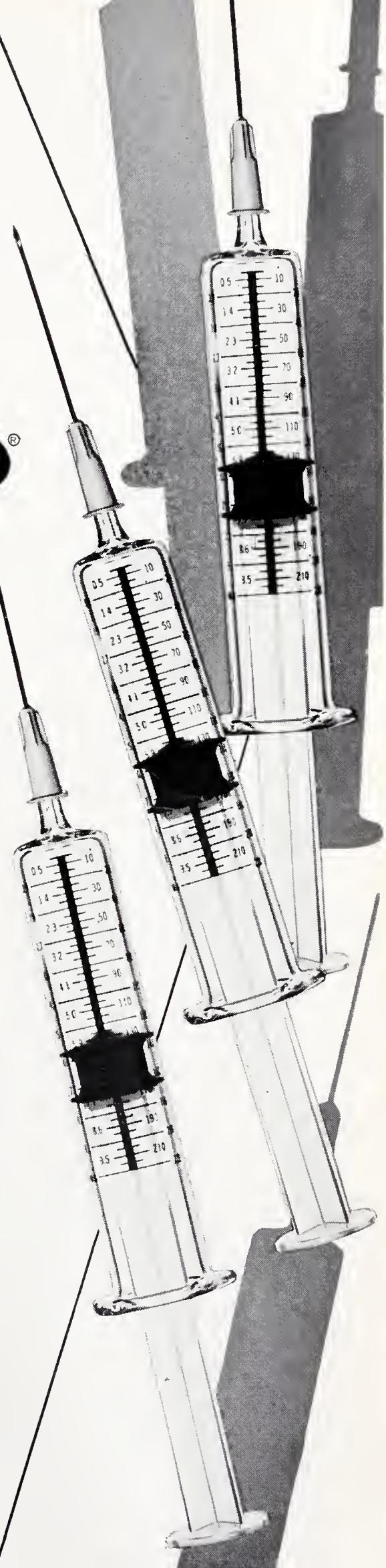


BROMSULPHALEIN®  
IN A COMPLETE,  
STERILE,  
DISPOSABLE,  
& ECONOMICAL  
PATIENT-UNIT.

BSP, one of the more valuable single laboratory procedures for determining hepatic function, is now packaged in a complete individual patient-unit.

Each BSP Disposable Unit contains a sterile syringe with the 5 mg./kg. BSP dosage schedule imprinted on the barrel, a sterile needle, alcohol swab and a 7.5 ml. or 10 ml. size ampule of terminally sterilized Bromsulphalein solution.

This all-inclusive disposable put-up lessens the chance of cross-infection and saves time and labor—the most costly commodities.



**HYNSON, WESTCOTT & DUNNING, INC.**  
BALTIMORE, MARYLAND 21201



(BSP03)

**THE  
JOURNAL OF THE  
Arkansas  
MEDICAL SOCIETY**

Owned by

**THE ARKANSAS MEDICAL SOCIETY**

**And Published Under Direction of the Council**

**ALFRED KAHN, JR., M.D., Editor**  
**1300 West Sixth Street Little Rock, Arkansas**  
**MR. PAUL C. SCHAEFER, Business Manager**  
**218 Kelley Bldg. Fort Smith, Arkansas**

**LITTLE ROCK BUSINESS OFFICE**  
**114 E. Second St. Little Rock, Arkansas**

**OFFICERS OF THE ARKANSAS MEDICAL SOCIETY**  
 JOSEPH A. NORTON, President ..... Little Rock  
 H. W. THOMAS, President-Elect ..... Dermott  
 JEROME LEVY, First Vice President ..... Little Rock  
 DAVID H. PONTIUS, Second Vice President ..... West Memphis  
 GEORGE F. WYNNE, Third Vice President ..... Warren  
 ELVIN SHUFFIELD, Secretary ..... Little Rock  
 W. R. BROOKSHER, Secretary Emeritus ..... Fort Smith  
 BEN N. SALTZMAN, Treasurer ..... Mountain Home  
 JOHN P. PRICE, Speaker, House of Delegates ..... Monticello  
 AMAIL CHUDY, Vice Speaker,  
     House of Delegates ..... North Little Rock  
 ALFRED KAHN, JR., Journal Editor ..... Little Rock  
 JAMES M. KOLB, SR., Delegate to AMA ..... Clarksville  
 JACK KENNEDY, Delegate to AMA ..... Arkadelphia  
 C. C. LONG, Alternate Delegate to AMA ..... Ozark  
 ALFRED KAHN, JR., Alternate Delegate to AMA ..... Little Rock  
 MR. PAUL C. SCHAEFER, Executive Vice President,  
     P.O. Box 1208 ..... Fort Smith

COUNCILORS		
First District	ELDON FAIRLEY	Osceola
	B. P. RANEY	Jonesboro
Second District	PAUL GRAY	Batesville
	HUGH R. EDWARDS	Searcy
Third District	PAUL MILLAR	Stuttgart
	L. J. P. BELL	Helena
Fourth District	T. E. TOWNSEND	Pine Bluff
	ALBERT W. LAZENBY	Dumas
Fifth District	KENNETH R. DUZAN	El Dorado
	PAUL SIZEMORE	Magnolia
Sixth District	KARLTON H. KEMP	Texarkana
	JOHN P. WOOD	Mena
Seventh District	JACK KENNEDY	Arkadelphia
	ROBERT F. McCRARY	Hot Springs
Eighth District	WILLIAM PAYTON KOLB	Little Rock
	JAMES R. MORRISON	Little Rock
Ninth District	STANLEY APPLEGATE	Springdale
	ROSS FOWLER	Harrison
Tenth District	C. C. LONG	Ozark
	A. S. KOENIG	Fort Smith

The Advertising policy of this JOURNAL is governed by the PRINCIPLES OF ADVERTISING of the State Medical Journal Advertising Bureau, Inc., by the Advertising Committee of the Bureau and by the Council of the Arkansas Medical Society.

*EXCLUSIVE PUBLICATION—Articles are accepted for publication on the condition that they are contributed solely to this JOURNAL.*

*COPYRIGHT 1968 — By the JOURNAL of the Arkansas Medical Society.*

*NEWS—Our readers are requested to send in items of news, also marked copies of newspapers containing matter of interest to the membership.*

**SCIENTIFIC ARTICLES**

Cytogenetic Studies in Human Malignant Disease ..... 417  
*Richard H. Bottomley, M.D.*

Medicine and the Arkansas Legislature ..... 420  
*Morris M. Henry, M.D.*

Subclavian Steal Syndrome ..... 422  
*John E. Allen, M.D.*  
*John D. McCracken, M.D.*  
*Woodbridge Morris, M.D.*

**FORUM FROM THE DEPT.  
OF OBGYN**

"Complications of Oral Contraceptives": ..... 424  
*Stacy R. Stephens, M.D.*

**FEATURES**

Electrocardiogram	432
What is Your Diagnosis?	433
Arkansas Public Health At a Glance	434
Editorial	435
Resolutions	436
Medicine in the News	436
Letter to the Editor	443
Announcements and Things to Come	443
Obituary	444
Personal and News Items	446
Proceedings of Societies	450
New Members	452
Tuberculosis Abstracts	445

Notice on Form 3579-P to be sent to Arkansas Medical Society, 218 Kelley Building, Fort Smith, Arkansas 72901. Published monthly under direction of the Council, Arkansas Medical Society, Vol. 64, No. 11. Subscriptions \$3.00 a year. Single copies 50 cents. Entered as second class matter, May 1, 1955, in the post office at Little Rock, Arkansas, under the Act of Congress of March, 1879. Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized August 1, 1918. Second-class postage paid at Little Rock, Arkansas.

# Cytogenetic Studies in Human Malignant Disease\*

Richard H. Bottomley, M.D.\*\*

The etiology of human leukemia is still not understood although in animals it is well known that certain types of leukemia are related to virus infection. As examples, the virus induced leukemias of mice have been extensively studied by such workers as Gross<sup>1</sup>, Moloney<sup>2</sup>, and Rauscher<sup>3</sup>. In man there is as yet no proof of the viral etiology of this disease, although several workers have described virus-like particles in human leukemia<sup>4,5</sup>. Despite the fact that most cases of human leukemia are apparently sporadic and not related to familial predisposition to the disease, several authors have reported families in which more than one case of leukemia has occurred. In some instances the inference has been drawn that the cases have resulted from some familial tendency to develop this condition. Some forms of human leukemia have been associated with chromosomal abnormalities. Thus, chronic granulocytic leukemia (CGL) has been found to be associated with the occurrence of the so-called Philadelphia chromosome (Ph<sup>1</sup>), first described by Nowell and Hungerford in 1960<sup>6</sup>. Also, it is known that mongolism which is associated with an abnormality in the G group of chromosomes is associated with an increased incidence of acute leukemia.<sup>7</sup> Chronic lymphocytic leukemia has not, however, been found to have a specific chromosomal abnormality, although Gunz<sup>8</sup> in 1962, reported an abnormal chromosome in a family containing more than one case of chronic lymphocytic leukemia<sup>9</sup>.

Figure No. 1 illustrates a karyotype from the peripheral blood of a 35 year old white male with chronic granulocytic leukemia, presumably due to the division of a leukemic cell. There is an abnor-

Initials D.P.  
Age 33 Sex M  
Count No 46

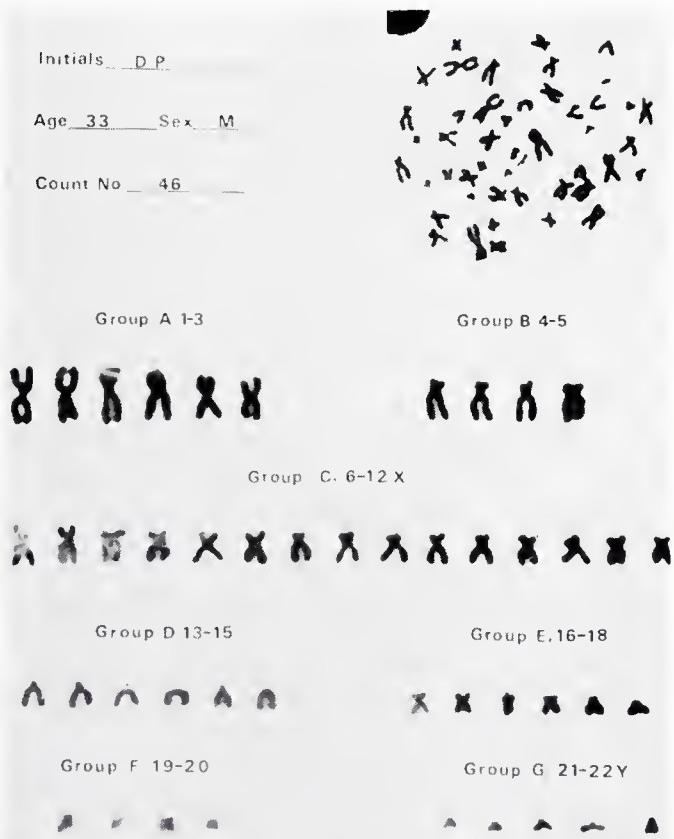


FIGURE 1

Karyotype of a cell from the peripheral blood of a 35 year old white male with chronic granulocytic leukemia.

mal chromosome in the G group (21-22) characterized by a loss of part of both long arms of one of the small acrocentric chromosomes. This chromosome, the Philadelphia (Ph<sup>1</sup>) chromosome, has been identified as a 21 chromosome and the difference in size is more noticeable in Figure No. 2 where the G group can be seen enlarged. This abnormal chromosome can be found in the majority of patients with chronic granulocytic leukemia when they are in relapse, but when they have been treated and are in remission most of the cells obtained from the peripheral blood are normal in chromosome complement.

The problem of chromosome abnormalities in

\* From the Cancer Section, Oklahoma Medical Research Foundation and the Departments of Medicine and Biochemistry of the University of Oklahoma School of Medicine.

Presented in part at the Arkansas-Oklahoma Regional Meeting of the American College of Physicians, Fountainhead Lodge, Lake Eufaula, Oklahoma, September 10, 1966.

Supported in part by Grant No. CA-6420 from the National Cancer Institute, National Institutes of Health, Bethesda, Maryland.

\*\* 825 N. E. 13th St., Okla. City, Okla. 73104.

## Group G, 21-22Y



FIGURE 2

Enlarged Group G chromosomes from the karyotype seen in Figure No. 1. The Ph<sup>1</sup> (Philadelphia) chromosome is indicated by the arrow and illustrates the loss of substance from the long arms of the chromosome.

patients with acute leukemia is somewhat more complex than that in chronic granulocytic leukemia. Thus, many reports have been published concerning the occurrence of abnormal chromosomes in patients with acute leukemia. Hungerford<sup>10</sup> in 1961, reported studies on the chromosomes of patients with acute lymphocytic leukemia in childhood. He found that in the peripheral blood of seven children there was no consistent chromosomal abnormality, although it appeared that the patients who had been treated for relatively long periods of time did demonstrate some abnormality in the number of chromosomes with more of the cells having aneuploidy, i.e., an abnormal number of chromosomes. He concluded at that time that there was no causal relationship between the chromosome abnormality and the acute leukemia, although either the progression of the disease or the therapy of the disease resulted in increasing numbers of chromosome abnormalities. Weinstein and Weinstein<sup>11</sup> in 1963, reported a chromosomal abnormality in a patient with acute myeloblastic leukemia. They found a modal chromosome number of 47 in this patient with an extra chromosome being found in the C group of chromosomes. Kinlough and Robson<sup>12</sup> in 1961, had previously reported an abnormal number of chromosomes in two patients with acute myeloblastic leukemia. They found that both of these patients demonstrated 47 chromosomes with an extra medium-sized chromosome in Group D.

In studies on the occurrence of so-called aneuploidy, Sandburg *et al.*<sup>13</sup> described a series of studies on the chromosomes from the bone marrow of normal patients and patients with leukemia. They found that in 60 non-leukemic controls only 12% of the cells were aneuploid, while in acute lymphoblastic leukemia 77% of the cells were aneuploid and in chronic lymphocytic

leukemia, acute myeloblastic leukemia, and chronic myelocytic leukemia there were also increased numbers of aneuploid cells. These studies indicate that patients with all types of leukemia apparently may have an increased number of cells containing either decreased or increased numbers of chromosomes. Studies of the occurrence of chromosomal abnormalities in familial leukemia have been carried out by several workers. The report by Gunz *et al.*<sup>8</sup> of a family in New Zealand with an abnormality in the G group chromosomes associated with the occurrence of chronic lymphocytic leukemia was the first demonstration of such an abnormality being the possible etiological factor in the leukemia. Since then other workers such as Court Brown<sup>9</sup> have reported other families in which siblings had lymphocytic leukemia with no evidence of the abnormal Christchurch chromosome. The present author had the opportunity to study one family in which two brothers evidenced chronic lymphocytic leukemia in their fifties. Chromosome studies of the family failed to demonstrate a consistent chromosome abnormality as previously described by Gunz. There were two interesting findings in this family: 1) approximately half of the descendants of this family had relative lymphocytosis and 2) the chromosome studies that were done revealed some members of the family with rather high percentages of aneuploidy. Whether either of these findings can be correlated with the occurrence of chronic lymphocytic leukemia is still conjectural; however, such a relationship may become apparent as this family is followed for a long period of time.

Recent studies by Sawitsky *et al.*<sup>14</sup> and by Swift and Hirschorn<sup>15</sup>, indicated that in two types of congenital disease there were correlations between susceptibility of chromosomes to damage and the occurrence of malignant diseases. The report by Sawitsky concerned the occurrence of chromosomal abnormalities in patients with so-called "Bloom's" syndrome or congenital telangiectatic erythema. They found that there were increased numbers of chromosome abnormalities in these patients and the families of these patients. Also there was a higher than expected incidence of acute leukemia and solid tumors in these families. The report by Swift and Hirschorn was concerned with the occurrence of chromosomal abnormalities in patients with Fanconi's anemia and their families. They found that these families also

had a higher than normal incidence of malignancies and leukemia and that the Fanconi's anemia was apparently inherited as an autosomal recessive. The chromosome studies in these families showed an abnormal percentage of chromosome abnormalities in both affected and unaffected members. They stated that the chromosome abnormalities may have been associated with a preceding virus infection and that the chromosomes of these patients may be more susceptible to damage by chemical, biological and physical agents which ordinarily would not produce chromosomal abnormalities.

Many solid tumors, as well as certain of the leukemias have been found to have abnormal numbers of chromosomes or abnormal chromosomes even though the person in which these malignancies developed had a normal karyotype. The debate is therefore whether the malignant change in some way is related to the chromosome change or whether the malignant change in some way produces secondarily an alteration in the number of chromosomes.

Although no consistent chromosome abnormality was found in the family with two cases of chronic lymphocytic leukemia, reported above, there was rather marked aneuploidy found in certain of the members of the family which might indicate that the chromosome segregating mechanism is more susceptible to damage than in normal individuals. How the observations on chromosome abnormalities in malignancy and the family studies on inherited chromosome abnormalities fit in with the usual sporadic cases of leukemia and solid tumors is not clear. Since most cases of leukemia do not occur in families it would appear unlikely that the majority of the cases are produced by familial predisposition to this disease. The most likely possibility is that the cases usually seen are sporadic, either related to changes in the genetic material of a single individual or related to a virus infection, and that the occasional cases seen in families are either due to chance or due to some inherited predisposition to the disease, such as the possibility of increased susceptibility to chromosome damage. How the described abnormalities in chromosome number and make-up could bring about the malignant change is also not clear. It has been suggested that the Ph<sup>1</sup> chromosome, which is present in chronic granulocytic leukemia, is in some way related to the control of granulocyte or leukocyte production. It is more difficult to ascribe a specific significance to

the multiple other types of chromosome abnormalities which have been described. There is a possibility that the rearrangement of chromosomes results in alterations of the control of cell division which is expressed in certain cells as a loss of control of growth. This would explain some of the biochemical and clinical heterogeneity which is seen in tumors even though of the same histologic type. If we better understood the control and differentiation of cells and the mechanism controlling the number of cells of a specific type in the body, we would be closer to understanding the mechanism behind these diseases.

## REFERENCES

1. Gross, L. Pathogenic Properties and Vertical Transmission of the Leukemia Agent. Proc. Soc. Exp. Biol. and Med. 78:342-348, 1951.
2. Moloney, J. B. Biological Studies on a Lymphoid-Leukemic Virus Extracted from Sarcoma 37 I. Origin and Introductory Investigations. J. Nat. Cancer Inst. 24:933-951, 1960.
3. Rauscher, F. I. A Virus-Induced Disease of Mice Characterized by Erythrocytopoiesis and Lymphoid Leukemia. J. Nat. Cancer Inst. 29:515-543, 1962.
4. Dmochowski, L., Sykes, J. A., Grey, C. E., Shullenberger, C. C. and Howe, C. D. Studies on Human Leukemia. Proc. Soc. Exp. Biol. and Med. 101:686-690, 1959.
5. Stewart, S. H., Lovelace, E., Lenden, J. and McBride, E. I. Viruses in Cultures of Human Leukemic Cells. Lav. Anat. Pat. 23:153-166, 1963.
6. Nowell, P. C. and Hungerford, D. A. A Minute Chromosome in Human Chronic Granulocytic Leukemia. Science 132:1497, 1960.
7. Tough, I. M., Court Brown, W. M., Baikie, A. G., Buckton, K. E., Harnden, D. G., Jacobs, P. A., King, M. J. and McBride, J. A. Cytogenetic Studies in Chronic Myeloid Leukemia and Acute Leukemia Associated with Mongolism. Lancet 1:411-417, 1961.
8. Gunz, F. W., Fitzgerald, P. H. and Adams, A. An Abnormal Chromosome in Chronic Lymphocytic Leukemia. Brit. Med. J. 2:1097-1099, 1962.
9. Court Brown, W. M. Chromosomal Abnormality and Chronic Lymphatic Leukemia. Lancet Vol. 1:986, May 2, 1964.
10. Hungerford, D. A. Chromosome Studies in Human Leukemia. I. Acute Leukemia in Children. J. of the Nat. Can. Inst. 27:983-1011, 1961.
11. Weinstein, A. W. and Weinstein, E. D. A Chromosomal Abnormality in Acute Myeloblastic Leukemia. New Eng. J. of Med. 268:253-255, 1963.
12. Kinlough, M. A. and Robson, H. N. Study of Chromosomes in Human Leukemia by a Direct Method. Brit. M. J. 2:1052-1055, 1961.
13. Sandberg, A. A., Ishihara, T., Miwa, T. and Hauschka, T. S. The *in vivo* Chromosome Constitution of Marrow from 34 Human Leukemics and 60 Non-Leukemic Controls. Cancer Res. 21:678-689, 1961.
14. Sawitsky, A., Bloom, D. and German, J. Chromosomal Breakage and Acute Leukemia in Congenital Telangiectatic Erythema and Stunted Growth. Annals of Int. Med. 65:487-495, 1966.
15. Swift, M. R. and Hirschorn, K. Fanconi's Anemia: Inherited Susceptibility to Chromosome Breakage in Various Tissues. Ann. of Int. Med. 65:496-503, 1966.

# Medicine and the Arkansas Legislature

Morriess M. Henry, M.D.\*

**A**s members of a profession, you need to be interested in the government of your state.

Your state, and the men who are responsible for spending your state money, need you to be interested in your state's affairs. Your particular home—or office—may be half way across Arkansas from the halls where laws are made. Still you can have an effect on policies of the State of Arkansas—if you'll get to know your legislators and relate to them your ideas on different matters in which you are interested.

Three basic types of bills are introduced into the legislature and some eventually become law.

Budget bills are first and foremost in importance. The legislature appropriates most of the funds for the universities and the medical school, colleges, and the many other state agencies and organizations. What is the purpose in having the legislature pass on the budgets for the medical school? What would they know about this? There are two main purposes in allowing the legislators to examine and vote on these appropriation bills. First, some budgets are probably kept in line. Some member of the legislature may find that the agency is asking for too much money and will sponsor a cutback. This examination procedure gives the receiving agency an opportunity to appeal to the legislature if the institution actually needs more money than is allotted to them.

Second, some bills are introduced into the legislature to correct defects in present laws or injustices that occur from present laws. These two types—the budget bill and the bill to correct laws—usually take up a small portion of the two months the legislature is in session every two years.

The third type of bill takes up the largest part of the legislature's time. I call these the "special interest bills." They are introduced by groups or organizations who intend to change the law to their benefit.

Usually when a law is changed to the advantage of one group, it disadvantages another group. It is up to the legislators to weigh each side and decide which need is more important. A legislator is just as human as anyone else. If one group presents a strong argument in its favor and the other group is not even present to rebut the argument or discuss the bill, that bill may have a good chance to become law.

A good example of this was a bill which was supposed to allow only one individual to become a licensed veterinarian without having to take the required examination. The argument used was that this man had practiced veterinary medicine for many years, and that this bill would only pertain to one individual. Only after the bill had passed both houses and was on the governor's desk did the Veterinarian Society's legal counsel suggest that almost anyone could practice veterinary medicine if this bill became law.

The bill actually wiped out almost all of their standards. It was vetoed on the last day that the governor had the opportunity to do so. The veterinarians were not watching for bills such as this one to come up, and they were not present when the bill which would affect them was discussed.

You may ask, "Well, how do you know when such bills are coming up that will affect my group or my profession?" The newspapers do not keep up with all the bills that are coming up, and so the full extent to which organizations or professions may be affected by some of these bills is not generally known. A lobbyist, regardless of contrary ideas you may have, is an essential part of our legislative process. The universities and colleges of Arkansas keep representatives at hand to check the pending bills that might affect their organizations. Most of the corporations, insurance companies, the legal profession, and others also have people nearby to watch as bills are introduced to study their ramifications and the extent to which they would be affected by passage of the bills.

The medical profession is perhaps more subject to attempts to legislating change than any other profession. A number of people would like to enter the medical profession without taking the time and making the effort necessary to obtain the proper training. Instead, they attempt to change the standards of medical practice which were set by law. A good example of this occurred in the past session of the legislature when a special interest group who call themselves doctors but do not have a recognized medical training in any accredited medical school attempted to pass a law which would make it illegal for people to be told the difference between their group and a physician.

\* 204 South East Street, Fayetteville, Ark. 72701.

MORRISS M. HENRY, M.D.

This would, of course, have had the effect of elevating them to the practice of medicine without benefit of medical training.

Here in Arkansas, the medical profession has been fortunate to have a capable physician, Dr. Elvin Shuffield, who was willing to take time off from his practice and look out for our interests. While serving as a physician to the members of the legislature, Dr. Shuffield has been on hand during the entire time the legislature was in session. As one legislator said, "You couldn't pay \$30,000 a year and get the good will and representation for the medical profession that Dr. Elvin Shuffield and his father before him do free for your profession."

While we need a friend present during the session to notify us of bills that may affect our profession, the support or opposition to such a bill must come from our group as individuals. Your representative or friend in the capitol often does not have the influence necessary to protect your interests. He must have your support to do the job.

What can you do to influence legislation?

First, get to know your state representative or senator, the man or woman who is supposed to represent you.

Second, it is important to realize that donating to a campaign fund is not an attempt to bribe your legislator. A \$25 or \$50 donation to his campaign fund during an election year only means that you think he is a good legislator, and you appreciate the time he is taking off from his regular occupation to help with the affairs of government. You should recognize that it is expensive to campaign for election to an office. If he is going to donate his time, you can help him by donating something for campaign expenses.

Third, when a bill comes up which affects your profession, get ALL the facts. You cannot be effective unless you do so. The legislature has a long distance telephone service (WATS) so legislators may call their constituents without additional charge. If you call in the morning before the legislature convenes, leave a number and ask

to be called back at your representative's convenience.

Many groups use a large volume of letter writing to try to influence their legislator's thinking, and you are competing with these people when you try to contact him by letter. A telephone call—a direct contact—is worth at least twenty-five letters. A personal visit with your legislator is better than a telephone call.

When a bill is introduced into either the House or Senate it is referred to a committee which, upon request, will have a public hearing on the bill. A public hearing is the place where you as a private citizen will have a chance to come forward to discuss reasons for supporting or opposing a bill. If the bill is sent out of committee with a "Do Pass" recommendation it will be brought up in the House or Senate where it is discussed by the members of that chamber. Only under very special circumstances can an individual who is not a member of the House or Senate come before the respective House or Senate and discuss the bill. If the bill is passed by one chamber, it goes through introduction, committee, hearing, etc., in the other chamber.

This dual consideration of proposals helps prevent the pushing through of bills which would affect certain groups before they know about it. A bill may make it through one house and into the committee of the other house before opposition can be formulated and organized. This is one very strong argument in favor of continuing to have two houses.

In February we expect to have a special session of the legislature. You may be called upon to exert your influence if the need arises. When the next attempt to lower the standards of medical care develops you will be informed by the Arkansas State Medical Society or one of its officials. Make every effort to express yourself to your legislators promptly before they vote on the measure.

If you fail to do so, blame yourself as well as your legislator when and if your professional standards are lowered.



# Subclavian Steal Syndrome

John E. Allen, M.D.\*

John D. McCracken, M.D.\*

Woodbridge E. Morris, M.D.\*\*

The surgical treatment of brachiocephalic arterial occlusive disease is now a common entity.<sup>1</sup> One variant, which is surgically treated with gratifying results, is cerebral vascular insufficiency from occlusion of the proximal subclavian or innominate artery with reverse flow from the cerebral vessels. The reverse flow fills the subclavian artery distal to the subclavian artery occlusion. This is now commonly termed the "subclavian steal syndrome."<sup>2</sup>

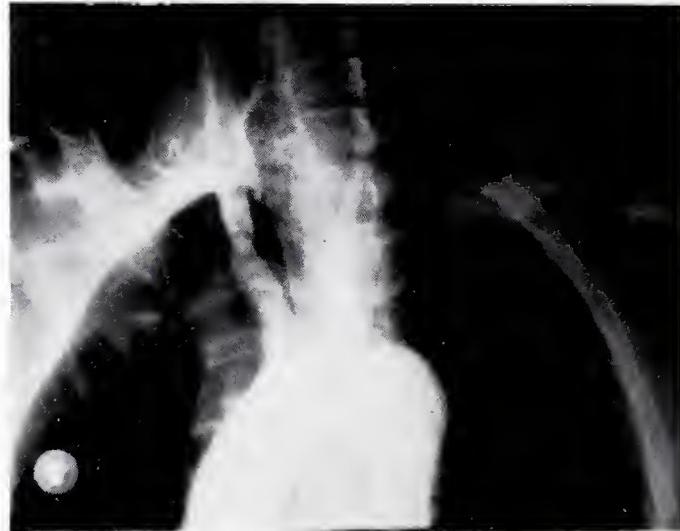
## Case Report

The patient, a forty-eight year old Caucasian male (P.M.) was admitted to the Baptist Medical Center in March, 1966. His occupation is a heavy equipment operator. He previously noted for syncopal episodes with fatigue of the left arm. The evening prior to admission, he experienced a mild right sided, transient, hemiparesis with associated dysarthria. This lasted two hours, with subsequent gradual recovery.

Physical examination revealed bruits over the base of the right and left neck. On March 2, 1966, a No. 8 percutaneous Gensi type catheter was introduced into the right femoral artery utilizing the Seldinger technique. The catheter was passed in retrograde manner, and without difficulty, to a point midway between the aortic valve and the origin of the innominate artery. Forty c.c. of Angioconray were injected using a Cordis injector at 450 P.S.I. and serial x-rays taken at the rate of two per second. The arteriogram revealed complete occlusion of the left subclavian artery with late filling of the left distal subclavian artery.

On March 3, 1966, the occluded arterial segment was resected and replaced with a 10 mm. woven dacron graft. Moderate atherosclerotic disease was noted in the innominate and the left common carotid arteries. Post-operatively, direct pressure measurements revealed no pressure gradient between the aorta and the left subclavian artery.

Subsequent course: The patient experienced dysarthria which persisted for two days and then resolved. He has now returned to work with no neurologic sequelae.



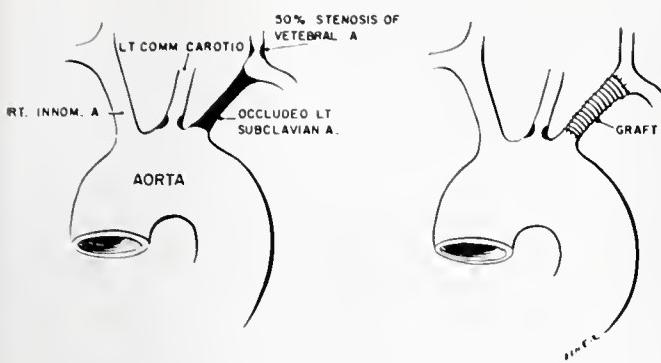
## Review of Literature

The "subclavian steal syndrome" was first described by Contorni in 1960.<sup>3</sup> Since that time, the English literature reveals 110 cases.<sup>4</sup> Seventy-five percent of the cases were males. Eighty-five percent of the patients fall in the age group forty to seventy. Twenty-seven percent noted claudication and easy fatigability of the ipsilateral arm, which was precipitated by exercise. Ninety-four percent of the cases had neurologic symptoms, almost always of a transient nature, which were precipitated by exercise in 16% of the cases. One-third of the patients with neurologic symptoms had associated occlusive lesions of the other cephalic arteries. The most consistent physical findings were a diminished pulse and a pressure gradient of at least 20 mm. Hg. in the involved arm. The



\* The Little Rock Surgery Clinic, 5512 W. Markham, Little Rock, Ark. 72205.

\*\* 5324 W. Markham, Little Rock, Ark. 72205.



average gradient was 50 mm. Hg. The diagnosis was established in each instance by demonstrating retrograde vertebral flow by angiography.

The lesion is located on the left in 70% of the cases. One case has been reported of bilateral involvement. It is almost always a complete occlusion and due to atherosclerosis. An atresia of the first portion of the left subclavian artery, an atresia of the aortic arch between the left common carotid and the left subclavian artery, and a stenosis of the left subclavian artery secondary to a suture line distortion have been reported.

A variety of surgical procedures has been utilized, including, among other, ligation of the vertebral artery, thromboendarterectomy, with or without patch, bypass, replacement, and transposition.<sup>5, 6, 7, 8, 9, 10</sup> Thromboendarterectomy was the most frequently employed procedure. Of the forty-nine cases reported with follow-up, forty-three were cured of their neurologic symptoms, four improved, and two were unchanged.

### Discussion

This patient is a classical example of the "subclavian steal syndrome" and presents several typical problems.

(1) It is necessary to measure pressures to determine the degree of involvement of other cephalic vessels. In this patient, the left common carotid

was noted to have an approximate 30 degree occlusion at the orifice without a significant pressure gradient.

(2) Severe fibrotic reaction was present in the tissues surrounding the left subclavian artery. This vessel was not suitable for endarterectomy, thus necessitating a replacement graft.

This syndrome is apparently more common than suspected, and should be recognized as such, due to the diminished pulse and pressure in the involved arm. A history of transient neurologic defects possibly associated with bruits should immediately make one suspicious of this syndrome.

### REFERENCES

1. Crawford, E. S., DeBakey, M. E., Morris, G. C., Jr., and Cooley, D. A.: Thrombo-Obliterative Disease of the Great Vessels Arising From the Aortic Arch, *J. THORACIC & CARDIOVASC. SURG.* 43:38, 1962.
2. Editorial: *New England J. Med.* 265:912, 1961.
3. Contorni, L.: Il circolo collaterale vertebro-vertebrale nella obliterazione dell'arteria subclavia alla sua origine, *Minerva Chir.* 15:268, 1960 (cited by Ashby *et al.*).
4. Killen, D. *et al.* The Subclavian Steal Syndrome, *J. of THORACIC & CARDIOVASC. SURG.* 53:51, 1966.
5. Heyman, A., Young, W. G., Jr., Dillon, M., Goree, J. A., Klein, L. J., and Tindall, G.: Cerebral Ischemia Caused by Occlusive Lesions of the Subclavian or Innominate Arteries, *Arch. Neurol.* 10:581, 1964.
6. Irvine, W. T., Luck, R. J., Sutton, D., and Walpita, P. R.: Intrathoracic Occlusion of Great Vessels Causing Cerebrovascular Insufficiency, *Lancet* 1:1177, 1963.
7. North, R. R., Fields, W. S., DeBakey, M. E., and Crawford, E. S.: Brachial-Basilar Insufficiency Syndrome, *Neurology* 12:810, 1962.
8. Parrott, J. C.: The Subclavian Steal Syndrome, *Arch. Surg.* 88:661, 1964.
9. Rob, C., Incipient Strokes: Technique of Surgical Therapy (third Princeton conference) in Cerebral Vascular Diseases, C. H. Millikan, R. G. Siekert, and J. P. Whisant, Editors, New York, 1961, Grune & Stratton, Inc., p. 112.
10. Williams, C. L., Scott, S. M., and Takaro, T.: Subclavian Steal, *Circulation* 28:14, 1963.



### Cross Infection by *Pseudomonas aeruginosa* as Hazard of Intensive Surgery

J. E. Tinne et al (Glasgow Royal Infirmary, Glasgow, Scotland) *Brit Med J* 4:313-315 (Nov 11) 1967

An outbreak of respiratory infection in a cardiac surgery unit affected seven patients, with three deaths. *Pseudomonas aeruginosa* type 10,

the causative organism, was also isolated from the anesthetic equipment. The role of tracheostomy, corticosteroids, and prophylactic antibiotics as possible predisposing factors is discussed. Measures taken to prevent a recurrence included screening of sputa on a selective medium incorporating cetrimide and nalidixic acid and the use of an efficient new antiseptic containing dipenidam.



STUDIES FROM  
THE UNIVERSITY OF ARKANSAS MEDICAL CENTER  
THE DEPARTMENT OF

# OBSTETRICS AND GYNECOLOGY

WILLIS E. BROWN, M.D., Professor and Chairman  
STACY R. STEPHENS, M.D., EDITOR

## Complications of Oral Contraceptives\*

Stacy R. Stephens, M.D.

Recently, much has been written in the lay press about the "serious" complications of oral contraceptive regimens. Several months ago a leading women's magazine published an article entitled, "The Terrible Trouble with the Birth-Control Pills". Isolated cases purporting to show serious complications were cited. As expected, reader response was good, and in a subsequent issue, letters were printed blaming the "Pill" for

many problems.

A more comprehensive evaluation of oral contraceptives was found in the November, 1967, McCall's magazine. Here, reported in the lay press for the first time, was the result of an official survey of Fellows of the American College of Obstetrics and Gynecology. This Survey of Experience with Oral Contraceptives compiled by the Committee on Public Education of the College, although not a statistical study, did reflect the opinions of specialists treating the female repro-

\* University of Arkansas Medical Center, 4301 W. Markham, Little Rock, Ark. 72205.

TABLE I  
PRESENTLY AVAILABLE ORAL CONTRACEPTIVES

Product	Manufacturer	Estrogen	Progesterin
1. Enovid	G. D. Searle	Mestranol .....	0.15 mg. Norethynodrel .....
2. Enovid	G. D. Searle	Mestranol .....	0.075 mg. Norethynodrel .....
3. Enovid-E	G. D. Searle	Mestranol .....	0.10 mg. Norethynodrel .....
4. Ovulen	G. D. Searle	Mestranol .....	0.10 mg. Ethynodiol Diacetate .....
5. Ortho-Novum	Ortho	Mestranol .....	0.60 mg. Norethindrone .....
6. Ortho-Novum-2	Ortho	Mestranol .....	0.10 mg. Norethindrone .....
7. Ortho-Novum-1	Ortho	Mestranol .....	0.05 mg. Norethindrone .....
8. *Ortho-Novum-SQ	Ortho	Mestranol .....	0.08 mg. Norethindrone .....
9. Norinyl	Syntex	Mestranol .....	0.10 mg. Norethindrone .....
10. Norinyl-1	Syntex	Mestranol .....	0.05 mg. Norethindrone .....
11. *Norquen	Syntex	Mestranol .....	0.08 mg. Norethindrone .....
12. *C-Quens	Eli Lilly	Mestranol .....	0.08 mg. Chlorotadinone Acetate .....
13. Norlestrin	Parke-Davis	Ethinyl-Estradiol	0.05 mg. Norethindrone Acetate .....
14. Norlestrin-1	Parke-Davis	Ethinyl-Estradiol	0.05 mg. Norethindrone Acetate .....
15. *Oracon	Mead-Johnson	Ethinyl-Estradiol	0.10 mg. Dimethisterone .....
16. Provest	Upjohn	Ethinyl-Estradiol	0.05 mg. Medroxyprogesterone Acetate .....

\*Sequential form

ductive system. These physicians estimated that during the past year they had started about 1.5 million women on birth control pills. This family planning method was the one most commonly requested by patients (95.8%) and most frequently prescribed by the physicians (87.3%). Thus, with many millions of women in our population taking birth control medications, the problem of complications is very important.

Any medication may be expected to have certain side effects and oral contraceptives offer no exception. Side effects may be absent or may occur with such severity as to preclude their use.

The purpose of this paper is to enumerate the symptoms and diseases which may be ascribed to the use of oral contraceptives and to evaluate the recent literature concerning these complications.

A brief review of oral contraceptives shows sixteen preparations currently available (Table I). The majority contain a synthetic estrogen and progestin in combination. Four preparations (Sequentials) consist of estrogen tablets to be taken for the first 14-16 days followed by a combination tablet the next 5-6 days. This form supposedly mimics more closely the normal physiological cycle. The symptoms and diseases which follow ingestion of oral contraceptives then, may be attributed to the action of their active ingredients and the individual bodily response of each female.

#### **Side Effects**

Commonly recognized symptoms which may be blamed on oral contraceptives are listed in Table II.

TABLE II

**SIDE EFFECTS OF ORAL CONTRACEPTIVES**

- A. Excessive Weight Gain
- B. Nausea
- C. Changes in Menses
- D. Breast Symptoms

*Menstrual Problems.* Amenorrhea and hypomenorrhea represent side effects due to progestin therapy, while breakthrough bleeding is more a failure of the drugs to adequately suppress normal hormonal mechanisms. Although troublesome, these problems are minor and can easily be cured by changing medications to a different dosage or type.

*Excessive Weight Gain.* Many patients note an increase in body weight while using oral contraceptives<sup>1,2</sup>. These changes are usually slight, being

in the range of 2-5 lbs. in 7-58 per cent of women although some may gain 8 lbs. or more. This gain may represent a slight increase in muscle mass due to anabolic effect of some progestin<sup>2</sup>, or, more likely, a progestin induced fluid retention. Bakker and Dightman noted this problem in 30 per cent of their approximately one hundred patients and concluded that fluid retention was an all or none effect; in women who had the problem it was quite obvious while the rest were not affected<sup>3</sup>.

*Nausea.* Probably the most common complaint from users of oral contraceptives is that of nausea. This symptom occurs mostly in the first several days of the initial two to three cycles and usually is present only rarely thereafter. It is somewhat less in patients using the sequential form. Even extremely low dosages of estrogen may produce in some women nausea severe enough to cause them to discontinue use of the "Pill". Again, prescription of a second or third brand of medication might produce some relief.

*Breast Symptoms.* Tenderness and soreness in the breasts similar to that encountered in early pregnancy may be present in some patients. However, they are rarely severe enough to cause discontinuation of medication. Women on occasion may experience galactorrhea. This usually occurs between cycles and disappears with resumption of medication. We have not encountered chronic cystic mastitis, fibroma, or carcinoma secondary to oral contraceptive regimens. However, fibroadenoma in association with galactorrhea has been reported<sup>4</sup>.

Symptoms and diseases which fall into the realm of complications are outlined in Table III.

#### **Vascular Complications**

*Venous Thrombophlebitis and Thromboembolism.* Thrombophlebitis in the nonpregnant female occurs at the rate of about 1,000 per million women per year. Predisposing factors include: anesthesia, infection, obesity, nutritional deficiencies, bacterial toxins, histamine production, trauma to blood vessels, venous stasis, increased viscosity of blood due to dehydration, immobility of the lower extremities, wearing of tight abdominal binders or garters, increasing age, and pregnancy. Fatal pulmonary thromboembolism was found to occur 8.4 times per million among white, nonpregnant, women between 15 and 44 years of age<sup>5</sup>.

During the antepartum period of pregnancy, thrombophlebitis is rare. Its incidence differs little

**TABLE III**  
**COMPLICATIONS OF ORAL CONTRACEPTIVE**  
**THERAPY**

*Vascular*

Venous Thrombophlebitis and Thromboembolism

Cerebral Arterial Insufficiency and Occlusion

Migraine Headache

Ocular Symptoms

Coronary Occlusion

*Liver Damage**Neoplastic Growth**Dermatologic Lesions*

Melasma

Alopecia

*Psychological Changes*

Anxiety

Libido

Depression

*Other*

Vaginitis

Endocervical Hyperplasia

Ureteral Dilatation

*Future Childbearing*

from that in the nonpregnant state. Hodges noted an incidence of 700 per million<sup>6</sup>; Quenneville found 1,320 per million<sup>7</sup>; Ullrey found 180 per million<sup>8</sup>; and McElin noted 460 per million women<sup>9</sup>.

However, during late pregnancy and in the early puerperium increased thrombophlebitic and thromboembolic morbidities are observed. During this time Ullery found a rate of thrombophlebitis of 3,420 per million women<sup>8</sup>; Hodges 1,890 per million<sup>6</sup>; and Solomons 2,730 per million women<sup>10</sup>.

One study group of slightly less than 12,000 women on Enovid for 25 months showed an incidence of thrombophlebitis of 2,000 per million women per year, a figure comparable to the non-pregnant state<sup>12</sup>.

A possible relationship between thrombosis and oral contraceptives was first suspected in 1961 when fatal pulmonary embolism occurred in two young California women who had been receiving Enovid<sup>11</sup>.

Statistical evidence has been regarded as failing to substantiate a causal relationship between oral contraceptives and thromboembolic disease. Studies of thromboembolic deaths in 1962 among white, nonpregnant, females between 15-44 years showed rates among users of Enovid of 12.1/mil-

lion and in non-users of 8.4/million<sup>5, 13</sup>. Later studies have confirmed the conclusion that there is no significant increase in the risk of thromboembolic death from the use of Enovid<sup>14</sup> and other oral contraceptives<sup>15</sup>.

Nevertheless, the recent literature is replete with reports of "pulmonary embolism and oral contraceptives". An example is a 21 year old white female on oral contraceptives for 1½ years who noted signs of unilateral superficial thrombophlebitis which seemed to respond to usual treatment. She died suddenly of pulmonary embolism 12 days later. A final sentence in this report states that there may have been traumatic phlebitis of the foot and ankle a few months earlier when she struck her foot on the clutch pedal of her car<sup>16</sup>.

Britain's Medical Research Council reviewed three separate studies of patients with thrombophlebitis and thromboembolic phenomena of varying severity<sup>17</sup>. They concluded that the risk of venous thrombosis or pulmonary embolism was about six times higher than normal in the pregnant and postpartum women and about three times normal in users of the Pill.

Although these figures have been widely circulated, their calculation was based on comparison of thirty-four women taking oral contraceptives and forty-five women who were pregnant. The total number of patients at risk in each group was not stated and was probably unknown. Also, no mention was made of previous episodes or underlying disease.

These authors speculated that twelve of two hundred and sixty-one deaths attributed to pulmonary embolism, coronary thrombosis, and cerebral thrombosis *may* have been due to oral contraceptives. From this they *estimated* an incidence of thromboembolic deaths in England attributable to the "Pill" of 30 per million women per year.

Laboratory investigations into coagulation changes which might add to the risk of thrombosis have yielded conflicting results. Margulis, *et al.*, investigated changes in the factors of blood coagulation in fifty-nine women on long-term treatment (15-24 months) with oral contraceptives<sup>18</sup>. They found an increase in mean platelet count, increase in clot tensile strength, decrease in recalcification time of platelet rich plasma, decrease in thromboplastin generation screen. All these changes were compatible with alterations toward hypercoagulability. Nevertheless, no thrombotic phenomena occurred in their patients during the study.

Houghie, *et al.*, in a similar study found significant increases in values of prothrombin and proconvertin levels, factors VII and X, and prothrombin<sup>19</sup>. These increases were similar to those found in the pregnant female. Again none of the studied patients developed evidence of thromboembolism.

Conversely, Powell, *et al.*, in their studies of sixteen patients over an 85 month period found no significant differences in blood coagulation and fibrinolytic components during treated and untreated cycles<sup>20</sup>.

Finally, decreased venous tone noted after treatment with oral contraceptives and in late pregnancy has been suggested as a possible contributing factor<sup>21</sup>.

That oral contraceptives produce alterations seem certain. These same alterations are observed in late pregnancy and the early puerperium and do contribute to maternal morbidity and mortality. Whether the observed changes in venous tone and coagulation factors produce a state of hypercoagulability is uncertain. However it seems safe to assume that the number of thromboembolic deaths attributed (rightly or wrongly) to the use of oral contraceptives is less than would be expected had these females completed additional pregnancies.

*Cerebral Arterial Insufficiency.* During the last 3 years there have appeared several reports of cerebral arterial insufficiency in young women receiving oral contraceptives<sup>22-27</sup>. In 1965, Walsh, *et al.*, collected sixty-nine case reports of patients with lesions ranging from migraine to stroke syndromes<sup>22</sup>. Some patients had taken oral contraceptives for as long as 36 months while others had received them for only 2 days. Many of these patients had past histories of cardiovascular disease. While this study was not a statistical survey it did call attention to the possibility of ophthalmological as well as neurological lesions secondary to oral contraceptives.

Stroke in a young woman is an uncommon clinical event. Usual underlying causes are rheumatic heart disease, endocarditis, atrial fibrillation, vasculitis, blood dyscrasias, trauma, hypertensive vascular disease, and pregnancy. Three British studies were carried out in an attempt to demonstrate an increase in cerebral arterial insufficiency in young women after 1961, the time of introduction of the "Pill" in that country. Two of these studies showed no differences in incidence before and after introduction of oral contraceptives<sup>23,26</sup>.

The third report, that of Bickerstaff and Holmes, presented the authors' experience as neurological consultants in one area of England over the 13 year period (1964-66)<sup>24</sup>. They found during this period thirty-two untreated patients with cerebral arterial insufficiency, an average of two-three per year. However, in 1964-66, eighteen women on oral contraceptives presented with that diagnosis. Angiographic study of several patients showed marked narrowing of the vessels rather than occlusion. Areas of brain supplied by particular arteries suddenly lost their function and in many cases recovered it quickly suggesting intense vasoconstriction. Postmortem examination in the fatal cases revealed neither arteriosclerotic plaques nor embolic phenomena.

This carefully prepared study does seem to indicate an association between cerebral arterial insufficiency and the use of oral contraceptives. If so, who then, are the patients most likely to be affected? Certainly, those with strong family or past histories of stroke syndromes would be suspect; also, those with hypertension and migraine prior to treatment; finally, patients who develop dizziness, migraine, vertigo, blurring of vision, etc. while receiving medication. In most reported instances patients who developed stroke syndromes had warning symptoms for days, weeks, or months prior to the stroke and most made remarkable recoveries following cessation of medication. Walsh noted in six patients disappearance of warning symptoms with cessation of treatment and reappearance during further therapy.

West and West found that EEG abnormalities in patients with headaches were not caused by oral contraceptives but pre-existed. They postulated a state of latent migraine which was activated by the oral contraceptives<sup>28</sup>.

An interesting study of five hundred women in a British Fertility Control Clinic revealed that 7 per cent had a past history of migraine occurring at times of hormonal change and psychological stress, 10 per cent had premenstrual headaches, and 11 per cent developed headaches for the first time while on oral contraceptives<sup>29</sup>. These "headache susceptible" patients had a tendency to flush easily; and their headaches were more frequent between pills, were usually unilateral and frontal, and were many times accompanied by nausea, vomiting, and visual disturbances.

During oral contraceptive therapy endometrial biopsies from fifty of the above patients were com-

pared with those from non-headache susceptible individuals. A marked increase in the number of arterioles of the endometrium was noted in the former. One might then speculate that in these headache-prone women, increased numbers of arterioles were perhaps present because of relative arterial insufficiency or spasm.

*Ocular Symptoms.* Blurred vision in patients receiving oral contraceptives, while not a common complaint, does appear from time to time. I have observed this problem on several occasions during the past year. Goren<sup>30</sup> and others<sup>31</sup> evaluated patients exhibiting this symptom. They found bilateral retinal edema which disappeared within 10 days of cessation of oral contraceptive treatment or change to another regimen. They concluded that the edema was caused by a delicate estrogen-progestin ratio. Others have noted an intolerance to contact lenses while on oral contraceptives<sup>32</sup>. Similar problems were seen during pregnancy, but not after estrogen treatment alone<sup>33</sup>.

Symptoms of cerebral arterial insufficiency may well be due to spasm rather than thrombosis. Ocular symptoms may also be on this basis but are probably due to edema secondary to progestins. Medication should be discontinued if warning symptoms occur.

*Coronary Disease.* Despite some reports of coronary occlusion in young women using oral contraceptives, no real evidence has been advanced to support a cause and effect relationship. Certainly, this lesion is rare in pregnancy when hormone levels are abnormally elevated. Conversely, the premature withdrawal of estrogens has been shown to greatly increase the incidence of coronary thrombosis<sup>34</sup>. There is a significant increase in the serum cholesterol in women who experience a premature spontaneous or surgical menopause. Davis has shown that estrogen treatment reduces the degree and rate of increase of serum cholesterol in these women<sup>35</sup>. Thus, estrogens tend to reduce rather than to increase the risk of coronary thrombosis.

Although there is evidence that progestins may be associated with an increase in some coagulation factors, no evidence to relate their use with coronary thrombosis is available.

#### Liver Damage

The possible adverse effects of oral contraceptives on the liver have for the most part been detected only by tests of hepatic function. Rarely

have clinical signs of jaundice, hepatomegaly, and pain been present. The rare biopsy material has shown cholestatic jaundice, an hepatocanicular lesion, rather than hepatocellular damage. Most patients who have developed jaundice during oral contraceptive therapy had noticed a similar problem during a previous pregnancy.

The majority of reports suggesting hepatotoxicity from oral contraceptives have originated in Finland and Sweden where racial, dietetic, and other environmental factors may play an important role.

Those tests of liver function most frequently reported to show disturbances are the transaminases, BSP excretion, and serum alkaline phosphatase. Raised levels of transaminases in postmenopausal women on short term oral contraceptive regimens were first reported by Eisalo, *et al.*, in 1964<sup>36</sup>, and confirmed by him in premenopausal females in 1965<sup>37</sup>. In the latter study elevations in serum transaminase levels were found in 4-18 per cent of patients. Abnormal BSP retention was noted in 19.48 per cent of patients. The older patients showed the higher percentage of abnormalities.

Conversely, Swyer and Little, noted no deviations from normal liver function in twelve carefully studied British subjects who had used oral contraceptives for long periods of time<sup>38</sup>. These observations were confirmed by others<sup>39, 40</sup>.

The reported abnormalities in liver function probably represent alterations in plasma proteins rather than hepatocellular damage. That abnormal values may be present during the early phases of oral contraceptive therapy and then revert to normal suggest an adjustment by the liver to its altered hormonal milieu. All studies have shown that tests of liver function revert to normal within 4 weeks after discontinuing medication. Jaundice also resolves without residual damage in this time. In view of the enormous number of women now taking oral contraceptives the physician must be less impressed by the occasional case of impaired liver function than by the virtual absence of clinically detectable liver damage.

#### Neoplastic Growth

Since patients taking oral contraceptives are under a physician's care and receive comprehensive physical examinations and cytological evaluations once or twice annually, slight abnormalities in the cervix, uterus, ovaries, and breasts are diagnosed early. Hence, the incidence of genital

cancer in these patients is usually reduced.

Small myomas of the uterus may increase in size during hormonal treatment. However, this is not a uniform finding and I would not hesitate to prescribe these drugs in patients with myomas.

I was unable to find reported in the literature instances of genital cancer in humans secondary to oral contraceptives or hormonal treatment. However, large doses of progestins have been found helpful in the palliation of advanced endometrial carcinoma<sup>41, 42</sup>.

Since some types of breast and endometrial adenocarcinoma may be stimulated by estrogens, their use in patients having these diagnoses is precluded.

#### **Dermatologic Lesions**

*Melasma.* In a clinic group of two hundred and twelve patients taking an oral contraceptive agent, melasma developed in sixty-one (29%) as a direct result of the drug<sup>43</sup>. Fifty-two of these sixty-one patients had previously noted melanoderma during pregnancy. Unlike the hyperpigmentation of pregnancy regression was not complete after cessation of oral contraceptive treatment. The incidence of melasma in this study is much higher than I have personally observed. On a rare occasion this lesion may become so pronounced as to necessitate discontinuing medication.

*Alopecia.* Hair loss occurs in relatively few females receiving oral contraceptives, but when present resembles that in the balding male. Seborrhea and acne may occur simultaneously. An androgenic effect of the progestin component has been suggested as the possible etiologic factor<sup>44</sup>.

#### **Psychological Changes**

*Anxiety.* Variations in personality from anxiety to depression occur in most women during their married lives. Those women taking oral contraceptives offer no exception. Fears common to the latter are relative to: possible carcinogenic effects; changes and control of sexual impulses; effectiveness, especially during the nausea and breast soreness of early treatment cycles; and future ability to reproduce. Fortunately, the properties and actions of these medications are such that adequate reassurances can be given the patient regarding most of her anxieties. Carcinogenic sequelae and effectiveness need no further comment. Future childbearing is discussed later.

*Libido.* A general impression among gynecologists is that many women experience either an increase or a decrease in libido while on the

"Pill". If one defines libido in relation to frequency of intercourse and orgasm then I, too, have noted both increases and decreases. However, in general I would agree with Bakker and Dightman<sup>3</sup> that there does not seem to be any change in women's basic interest in sexual relations due to oral contraceptives, rather that they tend to feel more comfortable and engage in them more frequently. Those patients who have had an adequate or even marginal sexual adjustment prior to the use of oral contraceptives usually experience their "normal" responses. Taking of the "Pill" separates in many minds the sexual act from contraception thus allowing recognition of hostilities about either or both<sup>45</sup>.

It is my impression that on oral contraceptives the older female with more children tends toward an increase in frequency of intercourse while in the younger women the opposite is true.

*Depression.* Repeated evaluation of patients by the Minnesota Multiphasic Personality Inventory showed no trends toward either increase or decrease of depression level<sup>3</sup>. Interview data indicated that many patients went through brief repeated periods of depression. It was apparent by history that these patients either had suffered similar mood swings prior to treatment or had encountered recent problems which explained the current depression.

Likewise, anxiety and tensions were found to be similar to those encountered in young housewives with too many small children and too limited financial resources. Women tended to blame the pills rather than considering personal factors as responsible for their anxieties and depressions.

#### **Other**

*Yeast Vulvovaginitis.* This lesion was found in thirteen patients receiving oral contraceptives<sup>46</sup>. Three patients were cured only by stopping the medication. It seems that in my own practice I am seeing more of these lesions usually during the early treatment cycles. The carbohydrate intolerance reported in some patients may be the etiological factor.

*Endocervical Hyperplasia.* We have noted a few patients taking combination oral contraceptives who have developed atypical polypoid lesions of the endocervical glands. These have shown hyperplasia but mitotic figures have been absent. Cessation of treatment has produced some regression but most have required cauterization or conization. The particular danger of this lesion

is the possible mistaken diagnosis of cervical adenocarcinoma in this benign lesion.

*Ureteral Dilatation.* Several patients receiving progestational therapy for long periods of time have developed symptoms of acute right pyelonephritis. Urological evaluation has shown right hydroureter, and exploratory laparotomy has revealed an abnormally large right ovarian vein partially obstructing the ureter in each case<sup>47</sup>.

#### **Future Childbearing**

Most patients will experience amenorrhea of varying duration following cyclic oral contraceptive therapy irrespective of the duration of such therapy. Ordinarily such amenorrhea lasts only 6-8 weeks but it may be more prolonged<sup>48</sup>. Occasionally, severe uterine bleeding may result after prolonged use of these agents<sup>49</sup>.

Failure of ovulation generally parallels amenorrhea and is an increasing problem today. Prolonged interruption of the pituitary-ovarian axis undoubtedly is a contributing factor. In the majority of patients ovulation will occur in 2-6 weeks.

Flowers studied the hormonal recovery in four patients following cessation of therapy<sup>50</sup>. FSH and LH levels returned to normal and ovulation occurred during the first post-treatment cycle. However, the endometrium did not return to normal until the end of the third such cycle; hence in these women pregnancy would not have been possible until the 4th month post-treatment.

A few patients show evidence of neither ovulation nor menses for many months. Usually, progesterone-produced withdrawal bleeding will correct this problem. Occasionally, small doses of corticosteroids will suffice. Finally, clomiphene has proved most helpful in treating those patients who remain anovulatory for many months.

Goldzieher, *et al.*, studied forty-one females who discontinued medication in order to become pregnant<sup>51</sup>. Sixty-two per cent did so in the first cycle after discontinuing medication. A larger study by these same authors showed that 41 per cent became pregnant during the first post-treatment month; 70 per cent in 3 months; 85 per cent in 6 months; and 92 per cent in 12 months<sup>52</sup>. They found no increase in congenital abnormalities of infants born after oral contraceptive therapy. The reported figures certainly fail to suggest a decreased fertility after oral contraceptive regimens.

#### **Summary**

At the present time oral contraceptives repre-

sent the best method of conception control. Used according to instructions they should be almost one hundred per cent effective. Side effects, while present in many patients, usually become insignificant or disappear altogether after a few cycles. A small percentage of patients find it necessary to discontinue or change medications because of these effects.

Complications, as discussed, do occur in a few susceptible individuals and may account for a variety of complaints. Whether observed changes in vascular tone and blood coagulation actually increase morbidity and mortality is unknown. Certainly, no convincing statistical proof confirming this is yet available. Likewise, evidence of oral contraceptives causing severe liver damage or carcinoma is lacking. Except for a few patients with prolonged post-treatment amenorrhea and anovulation, future childbearing capacity does not seem to be impaired.

Needless to say, careful family and past histories; initial physical examination; and close supervision during treatment are mandatory. The rare patient who presents factors predisposing to the discussed complications should perhaps be given another form of contraceptive (Table IV).

**TABLE IV  
CONTRAINdications TO  
ORAL CONTRACEPTIVE THERAPY**

1. Thrombophlebitis or Thromboembolism
2. Cerebral Arterial Insufficiency
3. Migraine
4. Severe Hypertension
5. Cardiovascular Disease
6. Nephritis
7. Severe Diabetes Mellitus
8. Liver Disease
9. Genital or Breast Cancer
10. Past History of the Above
11. Strong Family History of Stroke

It is my opinion that oral contraceptives properly prescribed and supervised should provide the function for which they were designed with minimal morbidity.

#### **BIBLIOGRAPHY**

1. Morris, J. A., Jr.: Physiological Control of Conception with Norethynodrel. Am. J. Obstet. & Gynec., 82:428, 1961.
2. Drill, V. A.: Endocrine Properties and Long-term Safety of Oral Contraceptives. Metabolism, 14:295, 1965.
3. Bakker, C. B. and Dightman, C. R.: Side Effects of Oral Contraceptives. Obstet. & Gynec., 28:373, 1966.

4. Gregg, W. I.: Galactorrhea after Contraceptive Hormones. *New England J. Med.*, 274:1432, 1966.
5. Federal Drug Administration Report on Enovid. *J.A.M.A.*, 185:776, 1963.
6. Hodges, J. C.: Thrombophlebitis Complicating Pregnancy. Armed Forces Seminar, Oct., 1962.
7. Quenneville, G., Borton, B., McDevitt, E., and Wright, I. S.: The Use of Anticoagulants for Thrombophlebitis During Pregnancy. *Am. J. Obstet. & Gynec.*, 77:1135, 1959.
8. Ullery, J. C.: Thromboembolic Disease Complicating Pregnancy and the Puerperium. *Am. J. Obstet. & Gynec.*, 68:1243, 1954.
9. McElin, T. W., Danforth, D. N., and Buckingham, J. C.: Thrombophlebitis in Antepartum Patients. *Quart. Bull. Northwestern Univ. Med. Sch.*, 33:242, 1959.
10. Solomons, E.: Thrombophlebitis in Pregnancy and the Puerperium. *Clin. Obstet. & Gynec.*, 2:674, 1959.
11. Tyler, E. D.: Oral Contraceptives and Venous Thrombosis. *J.A.M.A.*, 185:131, 1963.
12. Swyer, G. I.: Oral Contraceptives, Thrombosis, and Cyclical Factors Affecting Veins. *Brit. Med. J.*, 1:355, 1966.
13. Scarle, G. D. and Co., Chicago: Conference on Thromboembolic Phenomena in Women, Sept. 10, 1962.
14. Winter, I. C.: The Incidence of Thromboembolism in Enovid Users. *Metabolism*, 14:422, 1965.
15. Cahal, D. A.: Safety of Oral Contraceptives. *Brit. Med. J.*, 1:1180, 1965.
16. Ferguson, J. N.: Pulmonary Embolization and Oral Contraceptive. *J.A.M.A.*, 200:560, 1967.
17. Medical Research Council: Risk of Thromboembolic Disease in Women Taking Oral Contraceptives. *Brit. Med. J.*, 2:355, 1967.
18. Margulis, R. R., Ambrus, J. L., Mink, I. B., and Stryker, J. C.: Progestational Agents and Blood Coagulation. *Am. J. Obstet. & Gynec.*, 93:161, 1965.
19. Houghie, C., Rutherford, R. N., Banks, A. L., and Coburn, W. A.: Effect of a Progestin-Estrogen Oral Contraceptive in Blood Clotting Factors. *Metabolism*, 14:411, 1965.
20. Powell, L. C., Guest, M. M., and Bond, T. P.: Coagulation and Fibrinolytic Studies in Women Receiving an Anovulatory Drug (Medroxyprogesterone Acetate with Estradiol). *Am. J. Obstet. & Gynec.*, 93:167, 1965.
21. Goodrich, S. M. and Wood, J. E.: Peripheral Venous Distensibility and Velocity of Venous Blood Flow During Pregnancy or During Oral Contraceptive Therapy. *Am. J. Obstet. & Gynec.*, 90:740, 1964.
22. Walsh, F. B., Clark, D. B., Thompson, R. S., and Nicholson, D. H.: Oral Contraceptives and Neurophthalmologic Interest. *Arch. Ophthal.*, 74:628, 1965.
23. Jennett, W. B. and Cross, J. N.: Influence of Pregnancy and Oral Contraception on the Incidence of Strokes in Women of Childbearing Age. *Lancet*, 1:1019, 1967.
24. Bickerstaff, E. R. and Holmes, J. M.: Cerebral Arterial Insufficiency and Oral Contraceptives. *Brit. Med. J.*, 1:726, 1967.
25. Cole, M.: Strokes in Young Women Using Oral Contraceptives. *Arch. Int. Med.*, 120:551, 1967.
26. Illis, I., Kocen, R. S., McDonald, W. I., and Mondkar, V. P.: Oral Contraceptives and Cerebral Arterial Occlusion. *Brit. Med. J.*, 2:1164, 1965.
27. Shafey, S. and Scheinberg, P.: Neurological Syndromes Occurring in Patients Receiving Synthetic Steroids (Oral Contraceptives). *Neurology*, 16:205, 1966.
28. West, J. and West, E. D.: The E.E.G. and Personality of Women with Headaches on Oral Contraceptives. *Lancet*, 1:1180, 1966.
29. Grant, E. C. G.: Relation of Arterioles in the Endometrium to Headaches from Oral Contraceptives. *Lancet*, 1:1143, 1965.
30. Goren, S. B.: Retinal Edema Secondary to Oral Contraceptives. *Am. J. Ophthal.*, 64:447, 1967.
31. Flynn, M. A. and Esterly, D. B.: Ocular Manifestations After Enovid. *Am. J. Ophthal.*, 61:907, 1966.
32. Ruben, M.: Contact Lenses and Oral Contraceptives. *Brit. Med. J.*, 1:1110, 1966.
33. Sarwar, M.: Contact Lenses and Oral Contraceptives. *Brit. Med. J.*, 1:1235, 1966.
34. Higano, N., Robinson, R. W., and Cohen, W. D.: Increased Incidence of Cardiovascular Disease in Castrated Women: Two Year Follow-Up Studies. *New England J. Med.*, 268:1123, 1963.
35. Davis, M. E.: Estrogen and the Aging Process. *Year Book Obstet. & Gynec.*, pg. 339. Year Book Publishers, Chicago, 1964-65.
36. Eisalo, A., Järvinen, P. A., and Luukkainen, T.: Liver Function Tests During Intake of Contraceptive Tablets in Postmenopausal Women. *Brit. Med. J.*, 2:426, 1964.
37. Eisalo, A., Järvinen, P. A., and Luukkainen, T.: Liver Function Tests During Intake of Contraceptive Tablets in Premenopausal Women. *Brit. Med. J.*, 1:1416, 1965.
38. Swyer, G. I. M. and Little, V.: Absence of Hepatic Impairment in Long-Term Oral Contraceptive Users. *Brit. Med. J.*, 1:1412, 1965.
39. Linthorst, G.: Liver Function After Long-Term Progestational Treatment with and without Estrogen. *Brit. Med. J.*, 2:920, 1964.
40. Rice-Wray, E.: Oral Contraceptives and Liver Damage. *Brit. Med. J.*, 2:1011, 1964.
41. Frick, H. C., II: Progestational Drugs in the Management of Endometrial Cancer. *Metabolism*, 14:348, 1965.
42. Steiner, G. J., Kistner, R. W., and Craig, J. M.: Histological Effects of Progestins on Hyperplasia and Carcinoma in Situ of the Endometrium: Further Observations. *Metabolism*, 14:356, 1965.
43. Resnik, S.: Melasma Induced by Oral Contraceptive Drugs. *J.A.M.A.*, 199:601, 1967.
44. Cormia, F. E.: Alopecia from Oral Contraceptives. *J.A.M.A.*, 201:141, 1967.
45. Zell, J. R. and Crisp, W. E.: A Psychiatric Evaluation of the Use of Oral Contraceptives. *Obstet. & Gynec.*, 23:657, 1964.
46. Porter, P. S. and Lyle, J. S.: Yeast Vulvovaginitis Due to Oral Contraceptives. *Arch. Derm.*, 93:402, 1965.
47. Byrne, J. E.: A Case Against the "Pill." A Preliminary Report. *Missouri Med.*, 63:900, 1966.
48. Holmstrom, E. G.: The Long-Term Use of Ovulen for Contraception. *Metabolism*, 14:444, 1965.
49. Kahn, S., Novick, O., and Diamond, S.: Severe Uterine Bleeding Following the Prolonged Use of Norethynodrel-Mestranol. *Obstet. & Gynec.*, 25:298, 1965.
50. Flowers, C. E., Vorys, N., Stevens, V., Miller, A. T., and Jensen, L.: The Effects of Suppression of Menstruation with Ethynodiol Diacetate Upon the Pituitary, Ovary, and Endometrium. *Amer. J. Obstet. & Gynec.*, 96:784, 1966.
51. Goldzieher, J. W., Rice-Wray, E., Schulz-Contreras, M., and Aranda-Rosell, A.: Fertility Following Termination of Contraception with Norethindrone. *Am. J. Obstet.-Gynec.*, 84:1474, 1962.
52. Rice-Wray, E., Cervantes, A., Guierrez, I., Aranda-Rosell, A., and Goldzieher, J. W.: The Acceptability of Oral Progestins in Fertility Control. *Metabolism*, 14:451, 1965.



# ELECTROCARDIOGRAM

## **OF THE MONTH**

AGE: 67 SEX: Female BUILD: Obese BLOOD PRESSURE: 140/70

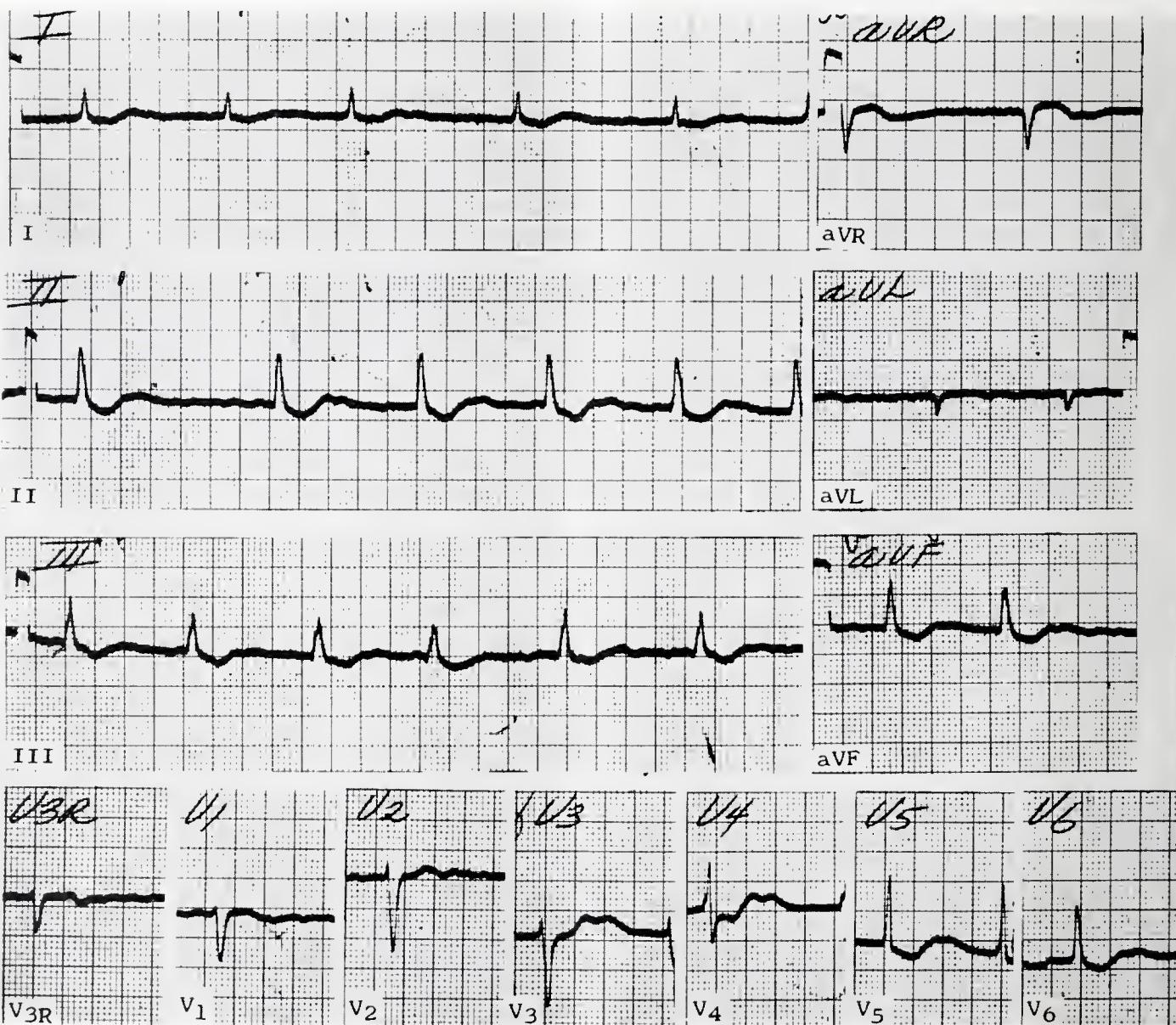
**CARDIAC DIAGNOSIS:** Etiology Undetermined—Heart Disease  
(previous Hypertensive)

**OTHER DIAGNOSES:** None

MEDICATION: Digoxin .25 mg, PETN 20 mg T.I.D.

**HISTORY:** Previously severe hypertension. Recent leg cramps.

**Answers on Page 446**



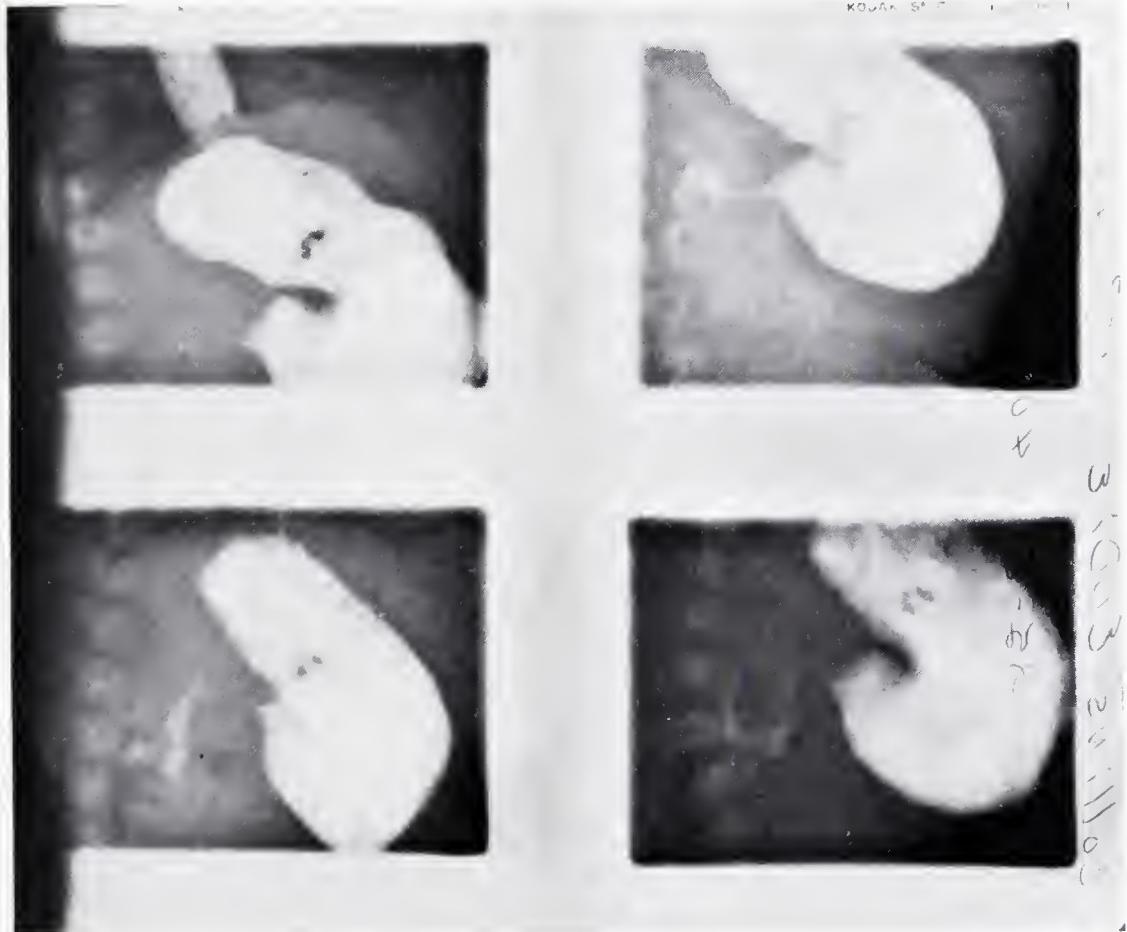
The Department of Medicine, University of Arkansas Medical Center  
James S. Taylor, M.D., Professor of Medicine

# WHAT IS YOUR DIAGNOSIS?



Prepared by the  
Department of Radiology, University of Arkansas  
School of Medicine, Little Rock

Answers on Page 446



## HISTORY:

6-week-old male with a four-day history of projectile vomiting.



# PUBLIC HEALTH AT A GLANCE

# The Physical Therapy Program in Arkansas

Bryant S. Swindoll, M.D.\*

After the Arkansas State Department of Health had been designated by the Governor to be the agency to administer the Home Health Services portion of the Social Security Act of 1965, a problem was posed as to which service would be chosen as a secondary activity to home nursing care which was designated in the Act as the basic service. After much deliberation with the state health officer and interested members of his staff, it was decided that physical therapy would be the most feasible service and the one most useful to patients and more likely to be utilized by members of the medical profession. We were fortunate in securing the services of Mr. Edwin L. Monkhouse, R.P.T., of Little Rock who did his work at Duke University and his apprenticeship with the North Carolina State Department of Health.

As is the case with nursing care services, physical therapy must be requested by the patient's physician who writes his orders on a form supplied through local health departments. The order form is usually picked up by a public health nurse who notifies the therapist of the referral. On his next scheduled trip to the area, the therapist checks in at the health department, picks up the referral form and is usually accompanied on his first visit by the public health nurse. This familiarizes the nurse with the patient's treatment so that, if need be, she can check on the patient between the therapist's visits. Accurate notes are made on the patient's record after each visit and the physician is kept informed as to his progress, or lack of progress, at regular intervals. When the patient reaches his maximal rehabilitative potential, his physician is notified and if the physician agrees, he is discharged from the service.

Obviously, a single physical therapist cannot take care of all therapy services throughout the

state. We have been able to partially relieve this situation by contracting for services from other physical therapists in several areas of the state. Mr. Monkhouse works in those areas where no other therapist is available. During fiscal year 1966-67, he visited patients in twenty-eight different counties and since he began work on January 3, 1966, he has been in forty counties.

A total of 1,182 therapy visits were made during 1966-67. All visits were made in the patient's home as rules and regulations of the Home Health Services portion of the Act preclude making institutional visits. The results obtained by the therapist has demonstrated that excellent physical therapy can be done in the home and that, in most instances, patients accept therapy with enthusiasm and that both they and their physicians are pleased with the results. The following map indicates the counties in which the therapist worked and the number of visits made in each during the past fiscal year.

**PHYSICAL THERAPY VISITS**



No. Counties Utilizing P.T. Service - 32  
No. Visits by State Physical Therapist - 1,182  
\* Contract P.T.

\* Arkansas State Department of Health, Little Rock, Ark. 72201.



## EDITORIAL

# Immune Reactions in the Kidney

Alfred Kahn, Jr., M.D.

Immune reactions have been widely reported in association with, and as a cause of, certain disease states. For example, a number of studies have shown that certain types of thyroiditis are associated with auto-immune response (Owen, *Journal of Clinical Endocrinology*, Vol. 18, page 1015, September, 1958; Riatt and Doniach, *Lancet*, Volume II, page 1027, November 15, 1958). Auto-immune antibodies to substances in the stomach have been found in pernicious anemia ("A Family Study of Pernicious Anemia by an Immunologic Method", K. te Velde, J. Abels, P. A. Anders, A. Arends, P. J. Hoedemacker, and H. O. Nierveg; *Journal of Laboratory and Clinical Medicine*, Volume 64, page 177, August, 1964.) Similar studies have been made in myasthenia gravis by Adner, Sherman, Ise, Schwab, and Dameshek (*New England Journal of Medicine*, Volume 271, page 1327, December 24, 1964). There are many reports on hemolysis of blood cells and platelet deficiencies due to immune processes.

Paronetto and Koffler in two articles in the *Journal of Clinical Investigation* (Vol. 44, page 1657, October, 1965) have given their results on studies on systemic lupus erythematosus and glomerular nephritis. They used an immunofluorescent technique to localize immunoglobulins, complement, and fibrinogen in the kidney.

In studying lupus erythematosus, the author's employed specimens taken at autopsy from sixteen patients; the tissues used were kidney, liver, spleen, and heart; they used four normal controls. Antisera against human plasma antigens were obtained from rabbits; the globulin fractions were fluoresceinated. The fluorescein treated antisera was incubated with the tissue sections from the diseased tissues and controls. The studies showed that gamma-2 and gamma 1-M immunoglobulins,

and in addition complement and fibrinogen were present in the glomeruli of the kidney and vessels of the kidney, spleen, heart and liver in patients with systemic lupus erythematosus. In addition alpha 2 macroglobulin, albumin, gamma 1 A globulin were found in the tubular epithelium of the kidneys. It is of great interest that nuclear localization of antibodies in the kidney are very inconstant and not a primary role. It is thought that the deposition of fibrinogen in the glomeruli may be a significant cause of renal damage.

The same authors have made a similar study of tissues from patients with acute, subacute, and chronic glomerular nephritis. Seventeen patients were studied. The criteria for acute glomerular nephritis consisted of swollen hyperplastic glomerular capillary endothelium and focal hemorrhages. Subacute glomerular nephritis cases demonstrated crescents and partial hyalinization of glomerular tufts; the arterioles were thickened. Chronic glomerular nephritis specimens revealed moderate to severe glomerular tuft hyalinization, hypertrophy of tubules, and interstitial fibrosis. The arteriolar walls showed medial thickening. Using these criteria to establish the diagnoses, tissue sections were evaluated using the immunofluorescent technique. The findings were similar to those in lupus erythematosus and suggested to the authors a similar injury induced by the antigen-antibody complexes. In glomerular nephritis gamma 2 and gamma 1 M globulins were found in the glomeruli. Gamma 1 A was found in the tubular epithelium. The degree of reaction and the vascular involvement was said to be less than in lupus erythematosus. Fibrinogen is deposited in glomeruli but Koffler and Paronetto feel that it tends to appear later in the course of glomerular nephritis, suggesting that the depo-

sition occurs in previously damaged glomeruli.

These studies extend our understanding of disease states in which immune reactions play an important role.

## RESOLUTIONS



WHEREAS, in order to express themselves on the recent loss of Dr. Masauki Hara, the members of the Pulaski County Medical Society do pause with respect; and

WHEREAS, the contributions made by Dr. Hara to the scientific advancement of medicine are countless in number and outstanding by comparison to contributions made by ordinary physicians; and

WHEREAS, this Society, this Community, and this State have suffered a loss that is irreplaceable; and

WHEREAS, the members of this Society wish to extend to Dr. Hara's family their heartfelt sorrow and sympathy;

BE IT THEREFORE RESOLVED: That a copy of this resolution be sent to Dr. Hara's family; and

That a copy of this resolution be published in the Journal of the Arkansas Medical Society; and

That this resolution be inserted into the permanent minutes of the Pulaski County Medical Society.

By Action of the Memorials Committee

T. Duel Brown, M.D., Chairman  
John McCollough Smith, M.D.  
Robert Watson, M.D.

Read to and approved by the Executive Committee, January 17, 1968.

## MEDICINE IN THE



Washington, D. C.—Dr. Dwight L. Wilbur, president-elect of the American Medical Association, warned that physicians will resist any effort to establish national medical standards under the Regional Medical Programs.

But he predicted that the medical profession would cooperate enthusiastically if the programs are carried out on a voluntary cooperative basis.

Dr. Wilbur spoke at a conference on Regional Medical Programs sponsored by the Department of Health, Education and Welfare.

"If the program in fact is clearly one designed to catalyze and to facilitate the development of better programs than now exist to serve patients and their physicians, it will undoubtedly receive enthusiastic cooperation from the medical profession and related groups," Dr. Wilbur said. "We

know that the law and its legislative history stress the voluntary cooperative nature of the program and that interference with existing patterns is specifically prohibited. . . .

"Unlike many other countries, our nation has reached its preeminence in many areas of activity because of this unique combination of multiple independent focal points of activity cooperating on a voluntary basis to achieve a commonly desired goal. . . .

"If RMP maintains its current emphasis on the working together of regional groups, it will fulfill its purpose of improving the quality, accessibility and availability of health care, physician and institutional performance, and consumer satisfaction. . . .

"On the other hand, if RMP becomes an instru-

ment for the establishment of national standards with the coercive compliance compelled by such standards, it will arouse nationwide resistance from physicians, institutions, and allied health professionals. What can be gained by cooperation and meaningful participation will surely be lost if the use of coercive power, which for the moment lies dormant in Public Law 89-239, becomes its dominant characteristic. . . .

"RMP is in a strategic position to bring about changes acceptable both to physicians and their patients that will improve performance and patient satisfaction without undermining patterns of behavior that are traditional, and, more significant, considered by the medical profession essential to the preservation of high quality care."

\* \* \* \* \*

The American Medical Association told Congress that weight reduction is a leading health area for quackery.

The AMA position on weight reduction, particularly as so-called diet pills are involved, was outlined by Drs. Theodore B. Van Itallie of New York, N. Y., a member of the Council of Foods and Nutrition, and Harry C. Shirkey of Birmingham, Ala., vice chairman of the Council on Drugs, in testimony before the Senate Antitrust and Monopoly Subcommittee.

The subcommittee was investigating reports that some osteopaths and physicians were making large incomes from assembly-line administration of multi-colored "diet" pills containing such drugs as barbiturates, thyroid extract, amphetamines, thiazine, diuretics, laxatives, and various hormones.

Officials of Illinois and Oregon testified that such pills were involved in at least 20 deaths in their states.

"Perhaps in no other area of health and medical problems do we encounter as much food faddism and quackery," Dr. Van Itallie testified. "The obese are extremely gullible, forever willing to believe that someday a gadget, a diet, a pill, or a book will lead to the miracle of easy and painless reduction of weight. While most of the quackery originates with health hucksters who have no scientific background, training, or qualifications in the medical or nutritional fields, unfortunately a physician is occasionally involved.

"The American Medical Association has long utilized its various publications to bring to the profession and the public up-to-date information

on the latest scientific advances in the area of obesity control. It frequently focuses attention upon those irregular practitioners and faddists who prey upon the unsuspecting public. As the national voice of Medicine, we believe that it is incumbent upon us to help protect the public from those practices which have the potential of adversely affecting the public health. . . .

"A physician who assumes the responsibility for treating obesity takes on a difficult role. Few other medical disorders require the same disciplined and prolonged cooperation of the patient in their treatment. Even under the best of circumstances, the results of treatment become apparent slowly. The inherent handicaps may strain the busy physician's patience and tempt him to resort to unsound methods of treatment. He must have a clear understanding of the physiological and psychological problems of obesity in order to treat it wisely."

Dr. Shirkey broke down weight drugs into seven general classifications: (1) cardiac glycosides; (2) hormones, chiefly thyroid; (3) diuretics; (4) anorexiants (appetite suppressants); (5) laxatives; (6) sedatives; and (7) antispasmodics. Of them he said:

**Cardiac glycosides:** "Their use for obesity is reprehensible and may well have attributed to the few reported deaths of patients receiving such treatment.

**Hormones—Thyroid:** "There are at least three irrationalities . . . in this hormonal approach to the treatment of obesity."

**Diuretics:** "There is no rational basis for the use of diuretic drugs in the treatment of simple obesity."

**Anorexiants:** "Amphetamines are useful as a crutch to help the patient become accustomed to a rigorous reducing diet. But long-term administration is not justified because they tend to become less effective and, in addition, can lead ultimately to habituation."

**Laxatives:** "There is little rational basis for the use of laxatives in the treatment of obesity."

\* \* \* \* \*

President Johnson said the administration would take additional steps to abate the increases in health care costs and to increase the numbers of health personnel.

In his economic message to Congress, he said:

"The supply of qualified health personnel has lagged behind the expanding demand. I will

shortly propose new measures to increase this supply.

"Last year, medical care prices rose 7 per cent, more than twice as fast as other prices. I shall propose new measures to slow down the spiraling cost of health care."

In his State of the Union message, the President included in a list of "absolutely intolerable" conditions which he said had existed for many years: "Hospital and medical costs are high, and they are rising." He did not amplify the brief statements in either of these two messages, leaving the details for a later health message to Congress.

Chairman Abraham A. Ribicoff (D., Conn.) said the Senate Government Operations Committee would conduct a two-year investigation into the rise in hospital and other health care costs. He said the subcommittee's study also would be concerned with the number of physicians and other health personnel.

Mr. Johnson said he also would propose a child health program and stricter penalties for those who traffic in LSD and other dangerous drugs. The child health program would provide poor families over the next five years with health service from prenatal care of the mother through the child's first year.

The budget for the Department of Health, Education and Welfare allotted \$66 million for medical education in fiscal 1969, for the year beginning next July 1, an increase of more than \$16 million. Federal aid for allied health training was increased from \$19 million to \$17.2 million.

Medicare expenditures for fiscal 1969 were estimated at \$6.3 billion, compared with \$5.7 billion for the current fiscal year.

Family planning programs of the federal government would be greatly expanded. The goal is to provide birth control information to one million women by quadrupling the size of the family planning services budget from \$6 million to \$24 million.

### **Third Annual Officers Conference**

The Arkansas Medical Society held its Third Annual Officers Conference on December 16, 1967, at the Marion Hotel in Little Rock.

Governor Winthrop Rockefeller was the guest speaker at the luncheon. Honored guests included Lieutenant Governor Maurice Britt; Mr. Sterling E. Cockrill, Jr., Speaker of the House of Representatives; Mr. George Nowotny, Minority Leader

of the House of Representatives; and Commissioner Len E. Blaylock of the Department of Public Welfare.

Special guests attending the conference were as follows: From the Student American Medical Association were Mr. Art Squire, President; Mr. Sam Koenig, Vice President; Mr. Jim Landers, Secretary; and Mr. Ed Strickland, Treasurer. From the Arkansas State Medical Assistants Society were Mrs. Elaine Hunziker, President; Mrs. Elizabeth Keigley, Vice President; Mrs. Edith Crane, President-elect; Mrs. Elizabeth Pelton, Secretary; and Mrs. Leodia Guenthner, Treasurer. Also attending as special guests were Mr. Ben Owens, President of the Arkansas Hospital Association, Mr. Russell Baxter of the Arkansas Rehabilitation Service, Mr. Waner Marks and Mr. Bob Hook of the Northwestern National Life Insurance Company, Mr. A. M. Edwards of the American Medical Association, and Mr. Dave Morrison of the American Medical Political Action Committee.

Physicians who have served in an unusual capacity such as mission work, work on the ship HOPE, and various other volunteer services were honored during the Socio-Economic Conference that afternoon. The doctors honored were: Dr. Charles Kemp, Dr. James Guthrie, Dr. Everett McClintock, Dr. J. S. Robinette, Dr. John M. Grasse, Dr. James Stuckey, Dr. John H. Miller, Dr. John Hundley, Dr. Richard M. Logue, Dr. William E. Knight, Dr. E. Morgan Collins, Dr. A. Meryl Grasse, Dr. Grimsley Graham, and Dr. R. A. Etherington.

Members of the Pulaski County Medical Assistants Society served as secretaries for committee meetings.

Officers of the Arkansas State Medical Assistants Society assisted with registration and served refreshments.

The Luncheon began at 12:00 P.M. and was followed at 2:00 P.M. by the Socio-Economic Conference. The topic was "Medicare in Arkansas" with Dr. H. W. Thomas, President-elect, presiding. Mr. Joe E. Elliott, Vice President of Blue Cross-Blue Shield, gave a "Report from Blue Cross-Blue Shield". His report was followed by a "Report from the Hospitals" by Mr. Graham Nixon, Executive Director of the Arkansas Hospital Association. Dr. L. A. Whittaker then gave a "Report from the Arkansas Medical Society". This was followed by a "Report from the Medical

Students" by Mr. Wendell Ross, President of the Student Body of the University of Arkansas Medical Center. The final talk was given by Dr. Joseph A. Norton on "The Price of Leadership".

After a brief coffee break at 3:30 P.M., the Special Conferences began at 4:00 P.M. and lasted until 5:00 P.M. This consisted of two simultaneous meetings. The first one was Orientation of New Members and was presided over by Dr. J. P. Price, Speaker of the House of Delegates of the Arkansas Medical Society. The first talk was given by Dr. Elvin Shuffield on "Arkansas Medical Society, Organization and Program". It was followed by "Dues—A Stewardship Report" by Dr. Ben N. Saltzman. "Legal Aspects of Medical Practice" was given by Mr. Eugene Warren, Attorney for the Arkansas Medical Society and Arkansas State Medical Board. The final talk for this meeting was on "Medical Ethics" by Dr. A. S. Koenig.

The other meeting was a Conference of County Medical Society Officers and was presided by Dr. T. E. Townsend. The first talk was given by Dr. Jerome Levy on "Programs and Projects of Interest". It was followed by "Attendance and Participation" by Dr. Robert McCrary. Dr. C. C. Long gave a talk on "Arkansas Medical Society and American Medical Association Aids". Mrs. C. C. Long, President-elect of the Woman's Auxiliary to the American Medical Association, talked on the "Woman's Auxiliary". The final talk was by Mrs. Frances Reibe, Medical Assistant to Dr. Kenneth R. Duzan, on "Medical Assistants". Various committees of the Arkansas Medical Society also met from 4:00 P.M. to 5:00 P.M.

A Cocktail Party was held following the meetings at 5:30 P.M. compliments of the Northwestern National Life Insurance Company. A banquet, which was to have been followed by a



**Heart Fund Campaign Launched**

A kickoff luncheon for the 1968 Baxter County Heart Fund campaign was held at the Cedar Grill. Heading the month-long solicitation will be, from left, Cliff Cagle, campaign chairman; Mrs. Lillian Koenig, a board member of the Arkansas Heart Association and local memorial chairman; Raymond Heelan, city chairman; Art Timmerman, campaign vice chairman; Joe Pracht, industry and organizations solicitation chairman; Dr. Ben N. Saltzman, medical coordinator; Powers L. Fowler, treasurer; Mrs. N. J. Sanders, secretary; Dr. Charles E. Howell, ticket sales chairman for the Heart Fund benefit variety show, "Ya Gotta Have Heart"; and Dr. Max Cheney, medical coordinator.

panel composed of Arkansas' Congressmen, was not held due to the late adjournment of Congress—making it impossible for the Arkansas delegation to return to Arkansas.

### Medical School Tuition Levels, 1967-68

Medical school tuitions have shown the same trend toward higher levels of cost as have tuitions for all forms of higher education. The tuition charges of privately supported medical schools have increased by an average of 74 per cent over the last eleven years. Tuition fees at publicly supported medical schools have also increased though at a lesser rate so that the average tuition paid in 1967 to a public school by a state resident

was 29 per cent higher than the 1957 level and the average tuition paid to a public school by a non-resident was 45 per cent higher than the 1957 level. The comparisons made in Table 1 of the minimum, maximum, median, and average tuition levels of 1967-68 with 1957-58 serve to highlight the extent to which tuition charges have changed. The Table shows that the minimum tuition or the lowest rate charged state residents by any public school increased in the last eleven years by more than 200 per cent and that the maximum tuition or highest rate at private schools increased by 95 per cent. The 1967 tuition rate of 39 of the 43 private medical schools exceeds the highest tuition rate in 1957.

TABLE 1  
COMPARISON OF MINIMUM, MAXIMUM, AVERAGE, AND MEDIAN TUITION LEVELS  
OF U. S. MEDICAL SCHOOLS IN 1967 WITH 1957

	Public Schools Resident Rates			Public Schools Non-Resident Rates			Private Schools		
	1957-58	1967-68	% Increase	1957-58	1967-68	% Increase	1957-58	1967-68	% Increase
Minimum Tuition .....	\$120	\$ 387	222.5	\$ 520	\$ 887	70.6	\$ 592	\$ 950	60.5
Maximum Tuition .....	765	1,215	58.8	1,271	1,870	47.1	1,280	2,500	95.3
Average Tuition .....	508	654	28.7	836	1,214	45.2	1,002	1,741	73.8
Median Tuition .....	507	653	28.8	837	1,200	43.4	1,008	1,800	78.6
Number of Schools .....	36	44		30	43		42	43	

TABLE 2  
DISTRIBUTION OF THE NUMBER OF SCHOOLS WITH TUITION CHARGES AT  
INDICATED DOLLAR LEVELS IN 1957 AND 1967  
PUBLIC MEDICAL SCHOOLS

Tuition Level	Resident Rates				Non-Resident Rates				PRIVATE MEDICAL SCHOOLS				
	1957-58		1967-68		1957-58		1967-68		1957-58		1967-68		
	No.	Cumulative %	No.	Cumulative %	No.	Cumulative %	No.	Cumulative %	No.	Cumulative %	No.	Cumulative %	
\$2,250-\$2,500											1	100.0	
2,000- 2,249											7	97.7	
1,750- 1,999									1	100.0		17	81.4
1,500- 1,749									4	97.7		13	41.9
1,250- 1,499									1	100.0		3	100.0
1,000- 1,249									11	88.4		1	11.7
750- 999	1	100.0	13	97.7	17	83.4	3	7.0	26	92.9	2	9.4	
500- 749	18	97.2	23	68.2	8	26.7			2	4.7			
250- 499	16	47.2	7	15.9									
Less than 250	1	2.8											
Total	36		44		30		43		42		43		

Table 2 compares the range of tuition charges by medical schools in 1967-68 with the range for 1957-58.

The cumulative percentage figures presented in Table 2 permit comparisons for the two time periods showing the increasing proportion of

schools with higher charges in 1967.

The more than \$25 million in scholarship and loan funds administered by U.S. medical schools in 1966-67 provide a major source of the financial assistance utilized by medical students to defray the costs of their medical education. In 1957-58, 11 per cent of all medical students obtained loans to meet their educational costs as compared with 55 per cent of all medical students in 1966-67. In 1957-58, 10 per cent of all medical students were awarded scholarships that had an average value of \$512, whereas in 1966-67, 23 per cent of the total student body was awarded scholarships with an average value of \$799. It is thus apparent that medical students in increasing numbers are attempting to meet the rising costs of medical school tuition by obtaining scholarship and loan funds of an increasing dollar value.

The continuing reliance on loan funds and other mechanisms for deferring payment of the cost of education to keep pace with rising tuition charges appears to amount to an acceptance of the policy by medical students of charging today's education off to tomorrow's professional earnings.

**VETERANS ADMINISTRATION  
Little Rock Hospital Division**

**February 29, 1968**

Mr. Paul C. Schaefer  
218 Kelley Building  
Post Office Box 1208  
Fort Smith, Arkansas 72901

Dear Mr. Schaefer:

The Veterans Administration will implement a simplified procedure, beginning July 1, 1967, for authorizing each eligible veteran to obtain outpatient medical services from the physician of his choice. An Outpatient Medical Treatment Identification Card issued to the veteran will serve as his authority to obtain outpatient care. This procedure will substantially reduce paperwork associated with reporting and billing.

**GENERAL.** The veteran is entitled to outpatient treatment for any condition(s) recorded on his "I.D." card. Prior VA approval is not required unless fees for medical and ancillary services furnished and recommended by you exceed thirty dollars per month. Urgent treatment causing the fee limitation to be temporarily exceeded will be paid for on receipt of a brief report supporting the need for prompt medical attention.

**BILLING.** You may bill the VA (on your own

stationery) for fees you normally charge to the general public. They will be paid to the extent that they do not exceed maximum rates established by a fee schedule negotiated with the State Medical Association. In the absence of a negotiated fee schedule, maximum rates will be established by the Veterans Administration. Payment will be expedited if the following are included on your itemized statement:

- a. Patient's full name
- b. His claim number
- c. The service-connected condition(s) treated
- d. The specific service(s) rendered and date(s)
- e. Fee(s)

**REPORTS.** A treatment report is necessary only when the cost of urgent medical services temporarily exceeds the thirty dollar limitation or when the service-connected condition(s) has significantly changed. A change of condition may affect the veteran's benefits.

**PREScriptions.** Prescriptions should be brought or mailed by the veteran to the VA Clinic of Jurisdiction when they are of a recurring nature or not needed at once. They will be filled promptly. When medication is needed immediately, it may be obtained from a private pharmacy by certifying on your prescription, "The VA has authorized me to treat the disability for which this prescription is written."

We appreciate your participation and cooperation in this program.

Very truly yours,  
P. J. ALMADEN, M.D.  
Chief, Outpatient Service

**The Committee for Correlation of  
Government Plans**

**HILL-BURTON PROGRAM IN ARKANSAS**

**John T. Herron, M.D., State Health Officer**

During World War II, it was determined by the Congress that the hospital system in this country was not adequate and had not been growing and developing with our population growth. It was further determined at the close of the war there would be a bi-partisan effort to construct additional hospital facilities. (At that time it was thought that this would be a good method to prevent a business recession. However, it later proved that efforts along these lines were not necessary to build up our economy.)

The states were advised in 1945 that in order to participate in the program it would be neces-

sary for them to: (1) designate a single state agency to administer the program, (2) require the licensure of hospitals and the establishment of minimum requirements for operation of hospitals, and (3) each state was required to develop a plan for the orderly construction of hospital facilities in the various communities in the state in accordance with need. That is, those communities having the greatest need for hospital beds would have highest priorities on the Federal funds. It was further required that special consideration be given to rural areas. Each state was required to make a survey of existing hospital facilities and determine whether or not these facilities would meet the minimum requirements as set forth in the statutes and in the regulations promulgated by the Surgeon General. The Public Law initiating this program has been known as the Hill-Burton Law, or Public Law 725 of the 79th Congress.

The Arkansas State Legislature in 1947 enacted Act 85 which made it the responsibility of the State Department of Health to administer the Hill-Burton Program and to be the licensing agency for hospitals in the State of Arkansas. The Department was required to have an Advisory Council composed of 16 members; eight of whom represented hospitals, five of the remainder representing medical and allied fields, and three representing consumers of hospital services. (In 1964 the Federal Act was amended to require that at least half of the members of the Advisory Council be consumers. At the present time there are on the Advisory Council eight consumers; three physicians, one dentist, two nursing home administrators, one hospital administrator, and one school nurse.) We were further required to develop minimum standards for operation of hospitals. We also were required to develop a State Plan for carrying out the purposes of the Hill-Burton Program, this Plan to be revised and brought up to date annually.

The state was divided into 10 hospital regions and 39 hospital service areas. These divisions were not based upon political boundaries, but rather upon the manner and custom that their people had already been following to avail themselves of existing medical and hospital services, and on existing custom with reference to trade, recreation, and other factors making for socio-economic subdivisions of our state.

In 1954, Public Law 725 was extended and a

new section entitled, "Medical Facilities" was added. Medical Facilities included Diagnostic and/or Treatment Centers, Rehabilitation Facilities, Chronic Disease Facilities, and Nursing Homes.

In 1964, the Legislation was further changed by Public Law 88-443 to combine Nursing Homes and Chronic Disease Facilities into a single category, and to develop a new category entitled, "Modernization." The rate of Federal participation has varied through the years, depending upon the availability of funds, and also upon the request for Federal funds from either local units of government or voluntary non-profit organizations, these being the only sponsors eligible for the Federal funds. Effective July 1, 1968, the rate of participation will be 33½% Federal and 66⅔% local.

At the end of the last fiscal year, a total of \$120,960,156.00 had been expended. The Federal share of this being \$60,486,152.00. A total of 6,875 new hospital beds have been built. This does not mean that we have 6,875 more hospital beds than we had prior to the initiation of the program. Many sub-standard facilities have been closed as a result of this program, resulting in the availability of better facilities for the care of our people. In many areas of the state, small hospitals had been owned and operated by physicians simply because the community had not provided the necessary facilities. As this program developed, many of these physicians voluntarily closed their institutions because of the economic burden placed upon them in attempting to operate such facilities.

The Hill-Burton Program has been both exciting and gratifying. We have had to work out many problems through the years. The program has probably had more widespread acceptance and support than any other activity of the Health Department since its institution.

#### CIVIL DEFENSE COMMITTEE MEETS

The Sub-Committee on State Health and Medical Resources for Civil Defense met in Little Rock on February 29th. The Committee heard talks as follows:

"Price of Survival," Dr. Edgar J. Easley, Committee Chairman.

"History of Emergency Medical Stockpile Program," Mr. Forrest Stokes, Region VII, Division of Health.

"State Shelter Program," Mr. Everett E. Talburt, State Civil Defense.

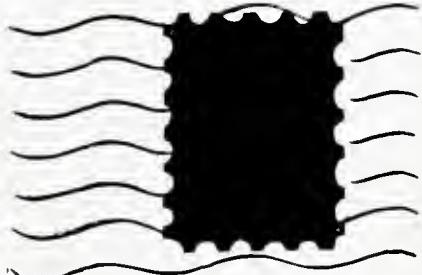
"State Emergency Resources Plan for Health and Health Service Plan," Mr. Jack Cottingham, State Health Department.

"Packaged Disaster Hospital Program," Mr. Thomas G. Carroll, State Health Department.

"Health Mobilization—Summary," Dr. Harvie Ellis, State Health Department.

The Committee agreed on recommendations which will be presented to the State Medical Society.

## LETTERS



### TO THE EDITOR

Dear Sir:

The ability of physicians to maintain life for very long periods in the unconscious patient raises the question as to how long such skills should be deployed. As physicians we are eager to promote the recovery of everyone who can do so. In order to deprive no one of his chances on this score it is relevant to know the longest periods of coma which have been followed by useful survival.

A committee of the Massachusetts General Hospital is studying our own records and the world literature to determine pertinent features in all patients who, *despite coma for over 5 weeks*, have made a useful recovery. We think it is vital not to overlook any well documented patient in this category. We should be grateful if any reader of this journal would draw our attention to any case published under a title which is not indicative of survival after prolonged coma. We are also eager to receive accounts of such cases as yet unreported. A publication incorporating our own and others' data is planned.

We should be grateful if you would publish this letter in your journal either in a section for correspondence, as a special brief communication, or in any other fashion you see fit.

Sincerely Yours,  
William H. Sweet, M.D., D.Sc.

Chief, Neurosurgical Service  
Chairman, Committee on Management  
of the Unconscious Patient  
Massachusetts General Hospital  
Boston, Massachusetts 02114 USA



### SPRING PROFESSIONAL PROGRAM

The Ellis Fischel State Cancer Hospital  
and

Cancer Research Center  
Columbia, Missouri

Saturday, April 6, 1968

- |       |                                                                                                                                          |
|-------|------------------------------------------------------------------------------------------------------------------------------------------|
| 9:00  | Introductory Remarks<br>Kenneth M. Endicott, M.D., Director<br>National Cancer Institute<br>Washington, D. C.                            |
| 9:10  | The Philosophy and Rewards of Cancer Detection<br>Emerson Day, M.D., Director<br>Strang Cancer Detection Center<br>New York, New York    |
| 9:50  | Potential Adverse Effects of Cancer Detection<br>John S. Spratt, Jr., M.D., Director<br>Cancer Research Center<br>Columbia, Missouri     |
| 10:30 | COFFEE                                                                                                                                   |
| 10:50 | An Economic Appraisal of Cancer Detection<br>Francis R. Watson, Ph.D., Biostatistician<br>Cancer Research Center<br>Columbia, Missouri   |
| 11:30 | A Statistical Evaluation of Recurrent Cancer Examinations<br>Thomas L. Lincoln, M.D.<br>The Rand Corporation<br>Santa Monica, California |
| 12:00 | LUNCHEON                                                                                                                                 |
| 1:00  | Oral Cytology<br>N. H. Rowe, Jr., D.D.S.<br>Washington University School of Dentistry<br>St. Louis, Missouri                             |
| 1:20  | The Gastric Camera<br>Walter L. Trudeau, M.D.<br>Washington University School of Medicine<br>St. Louis, Missouri                         |

## ANNOUNCEMENTS AND THINGS TO COME

- 1:40 Automated Pulmonary Cytology  
Melvin P. Ehrlich, President  
Nuclear Research Associates, Inc.  
New Hyde Park, New York
- 2:00 Cervical Cytologic Sampling of Puerto Ricans  
Jean Ubinas, M.D., Radiotherapist  
Nuclear Center  
San Juan, Puerto Rico
- 2:20 The Endometrial Brush  
David G. Hall, M.D.  
Professor of Obstetrics and Gynecology  
University of Missouri School of Medicine  
Columbia, Missouri
- 2:40 An Integrated Cancer Detection System  
Galen B. Cook, M.D.  
Cancer Research Center  
Columbia, Missouri
- 3:00 Tour of DETECT Mock-up
- 4:00 Dedication of Cancer Research Center  
Building No. 1  
Kenneth M. Endicott, M.D.  
W. C. Whitlow, L.L.B.  
John S. Spratt, Jr., M.D.
- 5:00 Reception

Accredited by the Academy of General Practice.

### Arkansas State Medical Assistants

The Arkansas State Medical Assistants Society will meet in annual convention in Fort Smith, Arkansas, May 4-5, 1968. It will be the 14th for the society. Mrs. Elaine Hunziker of Pine Bluff, the society's president, will be in charge. She will be assisted by Mrs. Le Laubach of Fort Smith, Convention Chairman, and her committee. Registrations will begin at 10 A.M. Saturday and continue until 6 P.M. in the lobby of the Ward Motel. All other convention activities for Saturday will be held in the new Municipal Auditorium.

### Meeting Will Be Held

A continuation course in Clinical Electroencephalography will be held September 9-11, 1968 in San Francisco, California. The course is designed as a basic review of the applications of the EEG to clinical medical practice, and is sponsored by the American EEG Society (aided by a grant from the National Center for Chronic Disease Control, U.S. Public Health Service).

### Southwestern Surgical Congress

The 20th annual meeting of the Southwestern Surgical Congress will be held in Denver, Colorado on April 22-25, 1968 at the Brown Palace Hotel.

### "Symposium on Exercise and the Heart"

A "Symposium on Exercise and the Heart" will be held on Sunday, March 3, 1968, 1:30-5:00 p.m. at the Jung Hotel in New Orleans, Louisiana. It is sponsored jointly by the committee on Exercise and Physical Fitness of the American Medical Association, the President's Council on Physical Fitness and the Louisiana State Medical Society. It is open to physicians and allied health personnel and will be held in conjunction with the New Orleans Graduate Medical Assembly, March 4-7, 1968, and the Annual Convention of the Southern District of the American Association for Health, Physical Education and Recreation March 1-4, 1968.

### South Central Association of Blood Banks

The South Central Association of Blood Banks will hold its 10th Annual Meeting in Dallas at the Hilton Inn on May 16-18, 1968. Any member of the medical professions, administrative or technical personnel, or members of biological or chemical sciences interested in blood bank, is invited to register. Registration fee for members of the SCABB is \$3.00 and for nonmembers the fee is \$5.00.



### OBITUARY

#### William Hale Perkins, M.D., 1919-1968

Bill Perkins was a quiet man with deep dedication to medicine, superlative ability and tenacious purpose who leaves an indelible mark upon the practice of medicine in Arkansas.

Bill came to Arkansas first in 1952 as an instructor in the Department of Medicine at the University of Arkansas Medical Center and left in 1954. He returned in 1956 as the first Chief of the Radioisotope Service at the Little Rock VA Hospital after tours of service at Oak Ridge Institute for

## OBITUARY

Nuclear Studies and the Brookhaven National Laboratory. He pioneered radioactive scanning techniques, published over 60 medical papers and abstracts during his stay in Arkansas, and participated in the training of many fellows, residents, interns, and medical students at the University of Arkansas Medical Center. His influence upon these physicians, his colleagues and other medical associates will make itself known for years to come.

Bill was a modest person and he would never annotate his career in this manner, however, it is appropriate to remember his more important accomplishments, so the rest of us might be stimulated to approach them.

He conceived the idea of a scientific instrument pool (located here in Little Rock) which is saving the Veterans Administration hundreds of thousands of dollars each year. He was the first Chief of the Southern Research Support Center in Little Rock (one of four in the nation). He dreamed of medical research geared to clinical medicine through the physical sciences such as physics, engineering, and theoretical chemistry so that advances in these areas might "infiltrate" medicine more effectively. He assisted in developing a biophysics program at the University and encouraged greater utilization of the Graduate Institute of Technology by medical investigators.

He was a graduate of Duke University (Phi Beta Kappa), the Harvard Medical School, and was a diplomate of the American Board of Internal Medicine.

He was a nationally known figure in his area of endeavor and an Associate Professor of Medicine of the University of Arkansas Medical Center. His death from a brain tumor at the age of 48 deprived us of his talents far too soon. Physicians in Arkansas are proud that he chose to become one of them during his career in medicine.

### Dr. Cecil F. Boulden

Dr. Cecil F. Boulden of Fort Smith died at the age of 44 after becoming ill at his office in Cooper Clinic on January 1, 1968. He was a resident of Fort Smith for the past 15 years. He was the chief of staff at St. Edwards Mercy Hospital and President of the Sebastian County Medical Society. He was a member of the American Medical Association, the American College of Physicians, and the American College of Chest Physicians. Dr. Boulden graduated from the University of Texas

Medical School and was a veteran of World War II. He is survived by his wife, Catherine; five sons, Robert, Michael, Patrick, Thomas, and Benjamin; his parents, Mr. and Mrs. C. F. Boulden, Sr. of Austin, Texas; and one sister, Miss Susan Boulden of Austin.

### Dr. Masauki Hara

Dr. Masauki Hara died at his home in Little Rock of a lingering illness at the age of 51 on January 11, 1968. He was a professor of surgery at the University of Arkansas Medical Center. He joined the Medical Center faculty in 1949 as an instructor in surgery and then was promoted to professor in 1955. In 1957 he created and headed an open heart surgery team that has performed more than 250 corrective open heart operations. He was head surgeon of the Medical Center's kidney transplant team which, starting in 1964, performed with increasing success, about two dozen transplants. He was a native of San Rafael, California and received his medical degrees from Stanford University. He served his residencies at St. Louis City Hospital and Barnard Free Skin and Cancer Hospital in St. Louis. He was a pioneer in open heart surgery and began the program within two years of the development of the artificial heart pump. He was a member of many medical organizations including the Arkansas Medical Society and the American Medical Association. Survivors include his wife; a son, Kevin Hara; a daughter, Cheryl Hara; and his mother and a brother, both of San Mateo, California.



### Cytological Examination of the Sputum

E. A. Oppenheimer et al (S. W. A. Kuper, Brompton Hosp, London) *Lancet* 2:1001-1002 (Nov 11) 1967

The value of sputum cytology in the study of pathological processes other than cancer is stressed. A method is described whereby sputum is fixed in a formalin-saline solution and liquefied in an ultrasonic disintegrator. Results using this technique are preferred to those obtained with chemical and enzymatic methods. Specimens in formalin can be mailed.



## PERSONAL AND NEWS ITEMS

### A. W. LAZENBY, M.D.

Dr. A. W. Lazenby of Dumas was recently elected as councilor of the Arkansas Medical Society, representing the fourth district.

Dr. Lazenby is a general practitioner. He and Dr. O. G. Blackwell have a clinic at 145 West Waterman Street in Dumas.



Dr. Lazenby was born in Danville. He received a Bachelor of Science Degree from Arkansas Polytechnic College at Russellville in 1951. In 1955, he was graduated from the University of Arkansas School of Medicine. Dr. Lazenby interned at the University of Arkansas Medical Center, then served two years with the United States Navy at Santa Ana, California.

Upon release from military service, Dr. Lazenby began practicing medicine in Dumas and has continued his practice there.

Dr. Lazenby has been an active member of organized medicine—he has served as vice president of his county medical society, on committees of the State Society, and has been active in the Arkansas Academy of General Practice.

In 1956, Dr. Lazenby was married to Mary M. Arnold of Little Rock. They have two children, ages seven and three.

Dr. Lazenby represents the counties of Ashley, Chicot, Desha, Drew, Jefferson and Lincoln on the Council. As councilor he is responsible for organizing component societies where none exist,

### ANSWER—What's Your Diagnosis?

#### DIAGNOSIS:

Hypertrophic pyloric stenosis.

#### X-RAY FINDINGS:

Persistent narrowing of the antrum with pressure defects in the base of the duodenal bulb and in the proximal portion of the gastric antrum.

### ANSWER—Electrocardiogram of the Month

RATE: Approximately 65

RHYTHM: Atrial fibrillation

P-R: \_\_\_\_\_ QRS: 0.09 sec. Q-T: \_\_\_\_\_

#### SIGNIFICANT ABNORMALITIES:

Atrial fibrillation, very prominent U waves on descending limb of T. Non-specific ST-T changes.

#### INTERPRETATION: Abnormal

Atrial fibrillation. ST-T and U wave changes consistent with hypokalemia.

for inquiring into the condition of the profession, and for improving and increasing the zeal of the county societies and their members. He is also responsible for resolving any problems arising in the county societies and for answering any questions that individual doctors may have regarding the county or state medical societies. Members of the county societies are urged to state their views to Dr. Lazenby so that he will be able to represent them in the best possible manner.

#### **Viet Nam by Dr. Phillip A. Snodgrass**

My arrival was in the month of October. As a flight surgeon for the U.S. Army, I was assigned to the 1st aviation brigade. This is a composite fixed-wing, helicopter support organization which has the responsibility for all aviation support for the army in Viet Nam less that which is directly assigned to an infantry division.

My duties initially were that of a commanding officer of an (OA) medical detachment attached to the 188th assault helicopter company. The assault helicopter company is an integral part of the 269th combat aviation battalion. The battalion is the direct aviation support element of the 25th infantry division, both headquartered at Cu Chi, Rvn. The company to which my medical detachment was attached provided direct aviation support to the 2d and 3d brigades of the 25th division located at Cu Chi, and Dau Tieng, Rvn.

An (OA) medical detachment is a self-supporting detachment staffed by one medical officer and nine enlisted men. It is a dispensary designed like a fixed dispensary in the U.S., however, it has the flexibility of airmobility like the unit it supports. The men are adequately trained in aviation and general medicine subjects. There is a laboratory technician with the ability to provide basic lab procedures.

To say the least, I was quite pleased to find on my arrival a wooden structure which was adequate in size to complete the mission we had. As every one who arrives, I had envisioned rice paddies and mud as a way of life. Interestingly, the third day after my arrival in country, found me wading in one of those rice paddies investigating an aircraft accident which had occurred outside the perimeter of Dau Tieng.

Dau Tieng is a medium-size village located in the heart of the Michelin rubber plantation. We are in the third corps tactical zone or war zone C. Dau Tieng is near the Hobo woods and

the mountain, Nui Ba Dinh (the Black Virgin mountain). It is located about 46 miles northwest of Saigou and 25 miles from the Cambodian border. Dau Tieng's rubber tree-shaded, cool, and quiet pleasure was greatly appreciated other than the anticipated vision. At night, however, it was soon apparent that there was a war nearby. A mortar battery was located approximately three hundred yards from my tent roofed "hooch". The battery produced harassment and interdiction fire at night, at bed time. This was harassing for those of us who were trying to sleep and hopefully interdicting the movement of the VC at night as they resupplied.

There was a myth that the VC would never mortar the rubber plantation because of the payment of adequate "taxes" by the owners. On 9 November, the Viet Cong produced a coordinated attack on our sleeping quarters, the mortar emplacement, the airfield, and the bridge near the village. It was that night that I realized what war and human mortality is.

Aviation medicine is an interesting concept in the practice of medicine. It appears to be the only assignment in the U.S. Army in which you are able to practice family medicine and still be considered a specialist in a particular field. In the assignment I had in Panama prior to Viet Nam, it was my pleasure to provide family medicine to my friends. At war, direct medical support to friends again, is the unique difference. Aviation personnel are a breed apart from the average American soldier and are extremely conscientious patients. Aviation medicine is preventive in concept with the greatest goal of prevention of aviation accidents through close contact preventive medicine.

Direct medical support to an aviation company composed of about 350 men, requires the flight surgeon to be present on combat assaults and medical evacuations. His exposure in combat is that of any physician, to provide some qualified medical treatment and boost the morale of the aviation personnel. Airmobile operations are extremely fluid. Wounded are seldom more than fifteen minutes from a definitive medical treatment facility. The disappointing aspect of being wounded in an aircraft is that seldom are there single injuries, and the aircraft flown by the army are extremely sophisticated and fragile.

Included in the mission of preventive medicine of a flight surgeon is the supervision of sanitation and the disposal of human waste. There are many

jibes concerning the educational level of a physician and this chore.

Malaria chemoprophylaxis is supervised also. Chloroquine-primaquine tablets are taken each week. The undesirable effect of diarrhea dissipates the effectiveness of this program. Substitution with the chloroquine phosphate tablet does not change the subjective rejection of some of the men. There are few mosquitos, presumably, because of the presence of the dry season. The malaria vector and the three types of malaria are endemic in our area. In November, one of the infantry units residing in the Dau Tieng compound had a peak incidence of twenty-one suspected cases of malaria with fourteen cases proven to be falciparum type. As a result a directive instituted a 28-day chemoprophylaxis program with dapsone. No cases were seen in the helicopter company. The inoculation of the malaria was subsequently proved to have occurred in these units while away from the base camp.

In December, I was reassigned to the battalion surgeon's office. One feels, comfort-wise, as if he had moved from some small Arkansas town to Little Rock. It also makes one feel that he has given up medicine as a vocation to become a staff officer. The utilization of a battalion surgeon, in the aviation battalion, is in the embryo stage. One must make the job, rather than redesign the one present. With the increased time, I found that one must design control systems to supervise and provide adequate medical support given at the company level by the three other flight surgeons. Unfortunately, there are countless reports which must be sent to higher headquarters.

To offset the disadvantage of being a staff officer, I contacted the orthopedic surgeons at the 12th evacuation hospital at Cu Chi. I attempt to assist them in surgery as often as possible, usually three to four times per week. I am impressed with the caliber of physicians practicing in the hospitals in Viet Nam.

Pre-operative and post-operative care is competent and resembles that found in the large hospitals in Little Rock. Supplies appear to be adequate and modern. Medications are not in short supply and are readily available.

In the O.R. of the 12th evac, each member of the surgical team appears to be competent. Anesthesia is provided with nurse anesthetists most of whom are male. General anesthesia is used almost exclusively because of the easiness of induction

and control. O positive low titer whole blood is used exclusively. Multiple transfusions of O positive blood appears to produce little difficulty.

It is apparent without statistical verification that the majority of wounds seen are due to fragmentation of weapons. Multiple wounds appear to be in the majority, especially of the extremities. The incidence of abdominal and thoracic wounds appear to be next in the greatest number. Neuro-surgical cases are referred to a larger hospital at Saigon, usually bypassing the evacuation hospital if seen at a clearing company first.

Protective armor, as worn by the aviation personnel, has saved lives. I have personally attended three persons who sustained only minor wounds due to fragments of missiles striking the armor. The ballistic helmet has protected many from fatal head injuries.

It has been an enlightening experience to be in Viet Nam. It has been informative from a personal and medical viewpoint.

It has been my desire to give you some insight into the progress of medicine in this war. Medicine here is sophisticated and timely. It does reduce morbidity and mortality.

### **Arkansas Medical Society**

The following information submitted by the St. Paul Insurance Companies on the group coverage for Professional Liability compares St. Paul's rates applicable to the Arkansas Medical Society with those of the Standard Rating Bureau. The comparison traces the development of rates since the inception of the program in 1963 through November of 1967. Current rates quoted for the various classes of coverage indicate a substantial saving over Bureau rates.

Following the price data are definitions of various types of coverage.

### **Professional Liability Program**

#### RATE HISTORY @ 5/15,000 Limits

##### (A) Program Inception

	<i>St. Paul</i>	<i>Standard</i>
Physician .....	\$ 43.	\$ 43.
Surgeon .....	103.	103.

##### (B) Change to 4 classes (4/63)

	<i>St. Paul</i>	<i>Standard</i>
Class 1 .....	\$ 35.	\$ 35.
Class 2 .....	44.	44.
Class 3 .....	84.	84.
Class 4 .....	112.	126.

## PERSONAL AND NEWS ITEMS

**(C) Rate Change (6/1/66)**

	<i>St. Paul</i>	<i>Standard</i>
Class 1 .....	\$ 35.	\$ 39.
Class 2 .....	44.	49.
Class 3 .....	84.	94.
Class 4 .....	112.	140.

**(D) Rate Change (4/24/67), St. Paul Rates**

	<i>St. Paul</i>	<i>Standard</i>
Class 1 .....	\$ 35.	\$ 39.
Class 2 .....	44.	49.
Class 3 .....	84.	94.
Class 4 .....	126.	140.

**(E) Rate Change (11/67). Bureau Changed to Five Classes and also Changed Rates**

	<i>St. Paul</i>	<i>Standard</i>
Class 1 .....	\$ 35.	\$ 37.
Class 2 .....	41.	65.
Class 3 .....	84.	111.
Class 4 .....	126.	148.
Class 5 .....	Not App.	185.

### **St. Paul and Standard**

#### **Physician**

**Class I—Applies to general practitioners and specialists who do not perform obstetrical procedures or surgery (other than incision of boils and superficial abscesses, or suturing of skin and superficial fascia), and who do not ordinarily assist in surgical procedures.**

**Class II—General practitioners and specialists who perform minor surgery (including obstetrical procedures not constituting major surgery) or assist in major surgery on their own patients. *Tonsillectomies, adenoidectomies, and cesarean sections shall be considered major surgery.***

#### **Surgeon**

**Class III—General practitioners who perform major surgery or assist in major surgery on other than their own patients and cardiologists (including catheterization, but not including cardiac surgery), ophthalmologists and proctologists.**

#### **St. Paul**

**Class IV—Specialists: Anesthesiologists, cardiac surgeons, neurosurgeons, obstetricians-gynecologists, orthopedists, otolaryngologists, plastic surgeons, surgeons-general, thoracic surgeons, urologists and vascular surgeons.**

#### **Standard**

**Class IV—Specialists hereafter indicated — other specialists shall be classified elsewhere. Cardiac surgeons, surgeons-general, otolaryngologists—no plastic surgery, thoracic surgeons, urologists, and vascular surgeons.**

**Class V—Specialists hereafter indicated: Anesthesiologists, neurosurgeons, obstetricians-gynecologists, orthopedists, otolaryngologists — plastic surgery, and plastic surgeons.**

#### **Dr. Saltzman on National Health Panel**

Dr. Ben N. Saltzman of Mountain Home has been appointed to a one-year term on the Committee on Mental Health of the American Academy of General Practice, the national family doctor organization announced this week.

The seven-member committee works with the American Psychiatric Association to educate family physicians in psychiatric techniques through continuing education programs. It also maintains close contact with other national mental health associations.

#### **Doctors in AAGP**

The following have been re-elected to the American Academy of General Practice: Dr. Ross Fowler, Harrison; Dr. Walter H. Lane, Jr., Dover; Dr. W. A. Ross, Arkadelphia; Dr. Clark Baker, Paragould; and Dr. Bob G. Banister, Conway.

#### **Dr. Mitchell Appointed Medical Director**

Dr. George K. Mitchell of Little Rock has been appointed full time Medical Director for Arkansas Blue Cross-Blue Shield. He has served on the Board of Trustees of Arkansas Blue Cross-Blue shield for the past four years while in private practice in Little Rock.

#### **Doctors Re-elected to AAGP**

The following have been re-elected to active membership in the American Academy of General Practice: Dr. Robert H. Nunnally of Gurdon, Dr. Howard R. Harris and Dr. A. W. Lazenby of Dumas, Dr. Charles H. Stinnett of Siloam Springs, Dr. John W. Ashby of Benton, Dr. William M. Wells of Heber Springs, Dr. James Kolb, Sr., of Clarksville.

#### **Dr. Wade Elected Chief of Staff**

Dr. H. King Wade, Jr. of Hot Springs was elected the chief of staff of the Ouachita Memorial Hospital in Hot Springs. Dr. John Haggard is the vice chief of staff and Dr. Ronald Bracken is the medical staff secretary.

**Dr. McMahan Speaks at Meeting**

Dr. Hugh Scott McMahan of Magnolia was the guest speaker at the monthly meeting of the Magnolia District Registered Nurses in January. Dr. McMahan discussed surgery for traumatic chest injuries and a question and answer period followed the discussion.

**Dr. Poff Reopens Office**

Dr. Joe H. Poff has reopened his office in Trumann for the practice of medicine and surgery. He was formerly a senior staff physician at Fort Roots Veterans Hospital in North Little Rock.

**Doctor Assigned Deputy Commander**

Dr. Nicholas W. Riegler, Jr., of Little Rock, who is a Colonel in the Army Reserve, has been assigned as deputy commander of the 807th Hospital Center. Medical units in Arkansas, Texas, Oklahoma, and Louisiana are under the supervision of the 807th.

Proceedings of Societies

**Doctors Attend Meeting**

Dr. Joseph A. Norton and Dr. Roger Bost, both of Little Rock, attended the February meeting of the Independence County Medical Society in Batesville.

**Dr. Harris Has New Associate**

Dr. W. Phillip Osborne is now associated with Dr. Willie Harris of England. Dr. Osborne has recently been discharged from the U.S. Army following duty as a Flight Surgeon in Vietnam.

**Dr. Ellis Is Guest Speaker**

Dr. Jacob P. Ellis of El Dorado was the guest speaker at a February luncheon meeting of the Kiwanis Club. The topic of his talk was "Heart and Other Organ Transplants."

**Doctor Named President of Company**

Dr. Edwin L. Dunaway of Conway was named president of Security Savings and Loan Association of Conway in February.

**Doctors Participate in Symposium**

Dr. T. M. Durham of Hot Springs, Dr. Stevenson Flanigan of Little Rock, Dr. Harry Hayes, Jr. of Little Rock, and Dr. Frank T. Padberg of Little Rock participated as faculty at the first

annual rehabilitation symposium on management of spinal cord injuries which was held March 1-2 at the Hot Springs Rehabilitation Center.



## **PROCEEDINGS OF SOCIETIES**

**Clark County Medical Society**

The Clark County Medical Society, Tri-County Medical Society and the Seventh Councilor District held a dinner honoring Congressman David Pryor in Arkadelphia on February 2. Officers of the Arkansas Medical Society and all physicians of the Fourth Congressional District were invited to attend. Eighty-six persons greeted Mr. Pryor at the dinner and heard him discuss his experiences as a freshman congressman.

Host at a reception preceding the dinner was the Clark County Medical Society. Dr. Jack Kennedy of Arkadelphia was in charge of arrangements.

**St. Francis County Elects Officers**

Dr. A. M. Bradley of Forrest City is the new president of St. Francis County Medical Society for 1968. Dr. Giles A. Sexton is the vice-president and Dr. E. Morgan Collins was elected secretary-treasurer, both of Forrest City.

**Dr. Beard Heads Baxter County Society**

Dr. Arthur L. Beard of Mountain Home was elected president of the Baxter County Medical Society. Dr. John Grasse of Calico Rock was elected vice president and Dr. Ben N. Saltzman was re-elected secretary. Dr. John F. Guenthner was re-elected as a delegate and Dr. Robert Kerr was elected as the alternate delegate.

**Boone County Society Elects Officers**

The new president of the Boone County Society is Dr. Paul L. Mahoney, Jr. Dr. Thomas E. Bell is the new vice president and Dr. A. R. Hammon is the new secretary-treasurer of the society. All are from Harrison.

**Columbia County Society Selects New Officers**

Dr. Paul Sizemore of Magnolia is the new president of the Columbia County Medical Society. Dr. John Ruff was elected vice president and Dr. Charles L. Weber, secretary-treasurer, both of Magnolia. Dr. H. Scott McMahan was elected the delegate and Dr. John Alexander the alternate delegate.

**Ouachita County Elects New Officers**

Dr. Larry R. Killough of Camden is the new president of Ouachita County Medical Society for 1968. Dr. A. E. Thorn of Camden is president-elect and Dr. Lowell V. Ozment of Camden is secretary. Dr. Bruce Ellis of Stephens is the delegate and Dr. James Guthrie of Camden is the alternate delegate.

**Ouachita Hospital Elects Staff Officers**

Dr. Bruce Ellis of Stephens is the new Chief of Staff of Ouachita Hospital in Camden. Camden doctors filled the other positions as follows: Dr. James Guthrie, Vice Chief of Staff; Dr. John

Miller, Secretary; Dr. Lowell V. Ozment, Parliamentarian; Dr. Perry J. Dalton, Member at Large; Dr. Larry R. Killough, Chief of Medicine; Dr. Willard Pruitt, Chief of Obstetrics; and Dr. J. B. Jameson, Chief of Surgery.

**Pulaski County Society Requests Health Study**

Dr. G. Thomas Jansen of Little Rock and Mr. Paul Harris, executive secretary of Pulaski County Medical Society, as representatives of Pulaski County Medical Society, requested a comprehensive health planning study in Pulaski County by the Metropolitan Area Planning Commission. The study would consist of an analysis of existing medical facilities and services available and would determine the immediate needs and project future developments in the medical field. The study would also propose ways of coordinating future developments and improvements. The Executive Committee of the Metropolitan Area Planning Commission has voted to make the study and to make application to the Department of Health, Education, and Welfare for assistance in financing the study.

**Ocular Manifestations of Infantile Cortical Hyperostosis**

L. R. Minton and J. H. Elliott (203 Twenty-first and Hayes Building, Nashville, Tenn) *Amer J Ophthal* 64:902-907 (Nov) 1967

Of 24 infants with infantile cortical hyperostosis, 33% developed significant swelling and edema around the orbits during the course of the disease. One case of unilateral proptosis was observed. In six of the 24 cases (25%) the swelling about the eyes was noted prior to mandibular involvement. Infantile cortical hyperostosis must be strongly considered when an infant under six months of age develops orbital swelling or proptosis.

**Experimentally Induced Chloroquine Retinopathy in Rabbits**

J. François and M. C. Maudgal (De Pintelaan, 115, Ghent, Belgium) *Amer J Ophthal* 64:886-893 (Nov) 1967

Ophthalmoscopic and histological findings of chloroquine-induced retinopathy in pigmented and albino rabbits are reported. The deposition of the chloroquine in the pigment epithelium was demonstrated by localization of the characteristic fluorescence in this layer. Obvious morphological changes were first seen in the choroid (vasodilation) and in the pigment epithelium, only later in the visual cells and the molecular and nerve fiber layers.



## NEW MEMBERS

DR. VICTOR L. HARVILLE, JR., is a new member of the Ouachita County Medical Society. He attended Henderson State Teachers College for his pre-medical education and the University of Arkansas School of Medicine for his medical education. He graduated in 1964 and then interned at the Westmoreland County Hospital in Greensburg, Pennsylvania. He served in the United States Marine Corps from 1953 to 1956 and as a medical officer in the United States Army from 1965 to 1967. He is a native of Prescott, Arkansas, where he was born in 1934. He is married to the former Jimma Alice Love. He is now practicing medicine in Camden as a general practitioner with an office at 223 Jefferson Street, Southwest.

A new member of Lawrence County Medical Society is DR. ALBERT B. DICKEY. He is a 1927 graduate of the University of Virginia School of Medicine. He served in the Army Medical Corps from 1950 to 1952. He was a former instructor in clinical surgery at the University of Arkansas School of Medicine. He spent 12½ years at the State Tuberculosis Hospital in Madisonville, Kentucky, and 18 years, with the exception of active duty, at the Arkansas Tuberculosis Sanatorium. He is a native of Clark County where he was born in 1903. He is presently retired because of physical disability and resides with his wife, Edna, in Walnut Ridge. He is presently a member of a cooperating group for the study on mycotic infection and for the past year has been one of three members of the steering committee for this group.

DR. CLYDE H. UNDERWOOD is a new member of Johnson County Medical Society. He is a graduate of Arkansas State Teachers College and a 1966 graduate of the University of Arkansas School of Medicine. He interned at St. Vincent Infirmary in Little Rock. He served with the

United States Marine Corps reserve from 1955 to 1963. He is a native of Quitman, Arkansas, where he was born in 1934. He is now in general practice in Clarksville with an office at 307 East Main and resides in Clarksville with his wife, Katherine Annette.

A new member of Searcy County Medical Society is DR. IVAN LYLE FRYE. He was born in Knoxville, Iowa in 1928. He attended the Arlington State College in Arlington, Texas for his pre-medical education and the University of Texas Medical Branch in Galveston, Texas for his medical education. He graduated from medical school in 1966 and then interned at the Memorial Baptist Hospital in Houston, Texas. He was a member of the United States Army from 1951 to 1953. He is now practicing medicine in Clinton, Arkansas as a general practitioner. He resides in Clinton with his wife, Sara Etta.

DR. ROBERT M. FRANKLIN is a new member of Pope-Yell County Medical Society. He is a 1963 graduate of the University of Arkansas School of Medicine and has been practicing for one year at the Millard-Henry Clinic in Russellville. Dr. Franklin is a general practitioner with an interest in internal medicine. He served his internship and residency at the Baptist Memorial Hospital in Memphis, Tennessee. He also served in the U.S. Air Force. He was born in 1937 and is a native of Magnolia.

Another new member of Pope-Yell County Medical Society is DR. WILLIAM E. JACKSON. He is a native of Mulberry, Arkansas, where he was born in 1932. He attended the University of Arkansas Medical School for his medical education and was graduated in 1964. He interned at the Arkansas Baptist Hospital and served as a medical officer in the U.S. Army from 1965 to 1967. He is now a general practitioner with an office at the Atkins Clinic in Atkins, Arkansas.

A new member of Franklin County Medical Society is DR. GRIFFITH H. FERRELL, JR. He was born in 1929 in Little Rock and attended the University of Arkansas School of Medicine, from which he was graduated in 1965. He interned at the John Peters Smith Hospital in Fort Worth, Texas, and served in the United States Air Force. He is presently practicing medicine as a general practitioner at 110 West Commercial in Ozark, Arkansas.

Greene-Clay County Medical Society has added DR. JAMES LARRY LAWSON to its membership. He was born in 1932 and is a native of Mount Ida, Arkansas. He attended the University of Arkansas for his pre-medical education and the University of Arkansas School of Medicine for his medical education. He graduated in 1962 and then interned at the University of Arkansas Medical Center. He was a resident at the University of Missouri Medical Center and also served in the U.S. Air Force from 1954 to 1956. He is now practicing general surgery with an office at 216 West Court Street in Paragould.

DR. L. O'NEAL SUTTER is a new member of Jackson County Medical Society. He is a 1966 graduate of the University of Arkansas School of Medicine and is presently practicing medicine as a general practitioner with an office in the Jamison Building in Tuckerman, Arkansas. He is a native of Pleasant Plains, Arkansas, where he was born in 1940. He attended the University of Arkansas for his preliminary education and interned at the Floyd Hospital in Rome, Georgia. He has been practicing medicine in Tuckerman for eight months.

A new member of Baxter County Medical Society is DR. ROBERT L. KERR. He was born in Lake Village in 1938. He attended Arkansas A&M for his pre-medical education and attended the University of Arkansas School of Medicine from which he was graduated in 1963. He interned at the University of Arkansas Medical Center and was a resident at the VA Hospital in Little Rock as a surgeon. He served two years in the U.S. Air Force as a general surgeon and an orthopedist. He is now practicing medicine as a surgeon and general practitioner with an office at 353 East Eighth in Mountain Home, Arkansas.

DR. RICHARD RAY SWENA is a new member of the Logan County Medical Society. He attended Union College in Lincoln, Nebraska, and Walla Walla College in Walla Walla, Washington, for his pre-medical education. He received his M.D. degree from Loma Linda University in Los Angeles, California in 1964. He served as an intern at the Porter Hospital in Denver, Colorado. He has been an instructor at Union College in Lincoln, Nebraska and at the Southwestern Union College in Keene, Texas.

He is also a member of the American Academy of General Practice. He is now in general practice with an office at 111 West Third Street in Booneville, Arkansas.

A new member of Benton County Medical Society is DR. JOHNNY LEE GARRETT. He was born in Rogers in 1941. He was graduated from the University of Arkansas School of Medicine in 1966. He served as an intern at the John Peter Smith Hospital in Fort Worth, Texas. He has been practicing medicine as a general practitioner for seven months at the Gravette Medical Center in Gravette, Arkansas.

A new member of Pulaski County Medical Society is DR. ROBERT S. ABERNATHY. He is a native of Gastonia, North Carolina. He attended the Davidson College in Davidson, North Carolina, and Yale University in New Haven, Connecticut, for his pre-medical education. He was graduated from Duke University School of Medicine in Durham, North Carolina, in 1949. He interned at the University of Minnesota Hospital in Minneapolis, Minnesota. He was also a resident at the University of Minnesota Hospital. He served as a First Lieutenant in the U.S. Army from 1951 to 1953. He was appointed to the faculty of the University of Arkansas Medical Center where he is now professor and head of the Department of Medicine.

Another new member of Pulaski County Medical Society is DR. HAROLD G. HUTSON. He is a native of Lonoke. He attended the University of Arkansas School of Medicine for his medical education and was graduated in 1957. He interned at the Saint Luke's Hospital in Denver, Colorado and served residences at the Arkansas Baptist Medical Center, the Lettermen General Hospital in San Francisco, and the Shriners Hospital for Crippled Children in Los Angeles. He is a specialist in orthopedic surgery and is presently associated with Drs. Shuffield and Nixon at 1000 Wolfe in Little Rock.

DR. WILLIAM C. GLOVER is a new member of Pulaski County Medical Society. He was born in 1932 in Pine Bluff, Arkansas. He attended the University of Arkansas School of Medicine for his medical education where he graduated in

1957. He interned at the University of Arkansas Medical Center and was also a pediatric resident there. He also served a residency in radiology at the University of Colorado Medical Center in Denver, Colorado. He has been the attending staff pediatrician at the Mobile General Hospital in Mobile, Alabama, while in practice in that city from 1962-64. He is presently with the Department of Radiology at the Arkansas Baptist Medical Center.

DR. WALTER G. EBERLE, II, is another new member of the Pulaski County Medical Society. He was born in 1933 in Little Rock. He attended

the University of Arkansas School of Medicine for his medical education and was graduated in 1960. He interned at the Boston City Hospital in Boston, Massachusetts. Dr. Eberle was a resident at the Newton-Wellesly Hospital in Newton, Massachusetts. He was an Associate Fellow in Hematology at the Peter Bent Brigham Hospital in Brookline, Massachusetts and an Associate Teaching Fellow in Hematology and Cancer Chemotherapy at the New England Deaconess Hospital in Brookline, Massachusetts. Dr. Eberle is presently specializing in hematology and cancer chemotherapy in Little Rock.



#### **Amino Acid Composition of Human Fibrinogen and Anti-coagulant Derivatives**

E. Triantaphyllopoulos and D. C. Triantaphyllopoulos (Dept of Physiology, Wayne State Univ, Detroit) *Biochem J* 105:393-400 (Oct) 1967

One anticoagulant derivative, isolated as the large electrophoretic peak at the end of the clottable period of the parent fibrinogen solution, was labelled LP<sub>100</sub>, and others obtained at twice this period (200% CP) were designated as LP<sub>200</sub> and SP<sub>200</sub> (LP, large peak; SP, small peak). Maximal 'molecular' weights of approximately 294,000 for LP<sub>100</sub>, 137,000 for LP<sub>200</sub>, and 37,000 for SP<sub>200</sub> were calculated for the protein moieties. At least 265 amino acid residues must have been lost from each fibrinogen molecule during the formation of LP<sub>100</sub>, and 1,362 during the formation of the other two derivatives. Only one derivative (LP<sub>200</sub>) had a partial specific volume different from that of fibrinogen. No significant differences in refractive index at 589 m $\mu$  were detected.

---

#### **The Umbilical Vein in Diseases of the Liver**

R. E. Kessler (Manhattan VA Hosp, New York) *Bull NY Acad Med* 43:977-984 (Nov) 1967

Umbilical vein catheterization provides a safe and simple method for accurately measuring portal venous pressure and visualizing the portal system by angiography without the hazards and high technical failure rate of splenic puncture and despite the presence of ascites or prior splenectomy. Successful catheterization of the umbilical vein is tantamount to successful angiography. The

presence of a measurable lesion is essential for an objective appraisal of anticancer drugs. Umbilical vein hepatography permits precise measurement of hepatic tumors and may demonstrate lesions as small as 0.5 cm in diameter. This is of considerable usefulness when evaluating the therapeutic efficacy of anticancer drugs at a time when the tumors are most vulnerable.

---

#### **Chronic Familial Granulomatosis: Report of Five Cases and Review of the Literature**

R. B. Johnston, Jr. (300 Longwood Ave., Boston) and J. S. McMurry, *Amer J. Dis Child* 4:370-378 (Oct.) 1967

Five male children have been described with a chronic granulomatous disease beginning in infancy and manifested by lymphadenopathy, hepatosplenomegaly, rash, pneumonia, anemia, leukocytosis, and hypergammaglobulinemia. Comparison has been made with 23 cases published earlier, and the clinical, laboratory, and pathological data of all 28 patients have been summarized. Although it has been recently discovered that granulocytes from these boys cannot destroy ingested microorganisms and have certain metabolic deficiencies, the pathogenesis has not been fully elucidated. Neither has effective therapy been found, and death has occurred in most instances by 7 years of age. Nominal standardization as "chronic X-linked granulomatosis" has been recommended if recent genetic studies are confirmed.



# T U B E R C U L O S I S

# A B S T R A C T S

Sponsored by Arkansas Tuberculosis Association

## BLOOD CARBONIC ANHYDRASE ACTIVITY IN INFANTS WITH RESPIRATORY-DISTRESS SYNDROME

When carbonic anhydrase activity was measured in infants, enzyme activity was found to be lower in premature babies than in those born at term and significantly lower in those with the respiratory-distress syndrome, suggesting a relationship to this disease.

Carbonic anhydrase is a zinc metalloenzyme which is important in the physiologic transport of carbon dioxide. Less carbonic anhydrase activity has been found in blood obtained from newborn infants than from adults, and even lower enzyme activity in blood from premature infants and fetuses.

The present investigation was undertaken to find out whether infants with the respiratory-distress syndrome have an even lower blood carbonic anhydrase activity than other newborn and premature infants, perhaps to a degree sufficient to interfere with adequate carbon dioxide transfer in the lungs. Because carbonic anhydrase is a zinc metalloenzyme, the blood zinc concentration in the infants was measured to determine whether a carbonic anhydrase deficiency was related to lowered concentration of zinc in the blood.

Blood was obtained from either the umbilical cord or heel capillary vessels from 121 newborn infants and analyzed for carbonic anhydrase activity and for zinc. Of 45 premature infants in the group, 19 had the respiratory-distress syndrome.

In six babies blood was drawn simultaneously from the umbilical artery, umbilical vein, and heel capillary. Analysis for zinc and carbonic anhydrase showed no significant differences in results obtained from the different routes of sampling. Blood samples were also obtained from 15 normal men and women and analyzed

for zinc and carbonic anhydrase activity.

Diagnosis of respiratory-distress syndrome was made on the basis of such clinical signs as tachypnea, chest retractions, asynchronous thoracic and abdominal respirations, expiratory grunt, and cyanosis as well as arterialized capillary-blood gas analyses revealing mixed respiratory and metabolic acidosis. The diagnosis was made before the blood carbonic anhydrase activity and zinc levels were known.

Carbonic anhydrase activity was measured on the basis of a pH-dependent color change that occurs as carbon dioxide is hydrated to bicarbonate and hydrogen ions in the presence of a barbital buffer and bromthymol blue indicator.

Results of assay showed that normal full-term newborn infants had approximately 25 per cent of the enzyme activity of adults. Premature infants without the respiratory-distress syndrome averaged 13 per cent of adult enzyme activity; those with the syndrome averaged 5 per cent of adult activity.

### ENZYME ACTIVITY COMPARED

The enzyme activity of the premature infants with the syndrome was significantly lower than other premature infants. However, immaturity, *per se*, is not the only reason why premature infants with the syndrome had significantly lower enzyme activity than infants without the disease. Babies with the respiratory-distress syndrome within each gestational age or weight group tended to have lower enzyme activities than babies without the syndrome. Furthermore, no baby with the syndrome had an enzyme activity greater than 400 enzyme units (E.U.), while 18 of 26 premature infants without the disease had enzyme activity above that level.

Although newborn babies had blood zinc levels much lower than normal adults, there was no significant difference in the blood zinc between premature infants with the syndrome and those without it. Thus, the enzyme activity per microgram of zinc was considerably and significantly

LEONARD I. KLEINMAN, M.D.; HAROLD G. PETERING, Ph.D.; JAMES M. SUTHERLAND, M.D. *The New England Journal of Medicine*. November 30, 1967.

lower in the premature infants with the syndrome than in those who did not have it.

The question arises whether the reduced blood carbonic anhydrase activity has any significance in the pathophysiology of the respiratory-distress syndrome or whether it simply represents a coincidental finding. On the basis of the present evidence, this question cannot be answered, but on the basis of knowledge of the chemistry and physiology of carbonic anhydrase and the respiratory-distress syndrome, a biologically significant relation appears to be distinctly possible.

As blood passes through the gas exchange region in the pulmonary capillary, carbon dioxide will rapidly diffuse from the blood into the alveoli, but the blood carbon dioxide will be constantly replenished by the conversion of bicarbonate to carbon dioxide.

If there is insufficient enzyme catalysis, this conversion of bicarbonate to carbon dioxide will be slowed to the degree that equilibrium will not be attained in the short time that the blood is in the pulmonary capillaries. When the blood leaves the region of gas exchange, the conversion of bicarbonate to carbon dioxide will continue, resulting in a blood carbon dioxide tension higher than that in the alveoli. The result is similar (except for the oxygen changes) to that of shunted venous blood mixing with arterialized blood, producing an elevated blood carbon dioxide tension and a decreased pH.

It has been established that elevated carbon dioxide tension and lowered pH augment pulmonary vascular resistance. This increase in

pulmonary vascular resistance in a newborn infant will tend to shunt blood through a patent ductus arteriosus or foramen ovale, thus diminishing blood flow through the lung.

#### SURFACTANT AFFECTED

The decreased pulmonary blood flow and shunting not only will increase the carbon dioxide retention but also might lower the amount of pulmonary surfactant. This in turn causes instability of alveoli, with resultant atelectasis and further carbon dioxide retention and hypoxia.

Thus, the vicious circle of carbon dioxide retention, pulmonary hypoperfusion, atelectasis, and carbon dioxide retention, thought to occur in infants with the respiratory-distress syndrome, can be initiated.

This does not mean that the reduced carbonic anhydrase activity is the sole cause of the respiratory-distress syndrome, but there are sound physiologic reasons to suggest that the low enzyme activity may contribute to the development of the disease.

The reasons for the decreased blood carbonic anhydrase activity in infants with respiratory distress are not clear. Possibly, there is an enzyme inhibitor in the blood of infants or lack of an enzyme activator that is normally present in adult plasma, or, there may be a slowed or altered fetal maturation of carbonic anhydrase in those infants who develop the syndrome.

Zinc deficiency per se cannot explain the low enzyme activity in infants with this syndrome because these infants have as much zinc as infants without the disease.



#### Termination of Pregnancy by Vacuum Aspiration

Z. Dvorák, V. Trnka and R. Vasíček (J. Bruegel, 21 Connaught Dr, London) *Lancet* 2:997-998 (Nov 11) 1967

The pregnancies of 1500 women were terminated by means of vacuum aspiration. Pressures of 0.7 atmospheres were obtained by a water pump, and glass suction tubes with blunt rounded ends were used. In 310 cases where the pregnancy was of 11 to 12 weeks' duration, the operation had to be completed by ovum forceps. After aspira-

tion, the uterine cavity was checked with a blunt curette; residue of ovum or decidua were found in 10.4% of cases. Inflammation developed, in hospital, in 2.4% of cases; late postoperative bleeding necessitated readmission in eight cases, in three of which chorionic fragments were found. The more advanced the pregnancy, the greater the risk of complications and serious blood loss and the more difficult the operation. Injury to the cervix of corpus uteri was not encountered.

May, 1968

# THE JOURNAL OF THE *Arkansas MEDICAL SOCIETY*

Vol. 64 No. 12

FORT SMITH, ARKANSAS

Ointment, too

Don't forget the lotion

0.05%

neomycin sulfate, also

U.C. MEDICAL CENTER LIBRARY

JUN 3 1968

San Francisco 94122

800207

ional information available to physicians upon request.  
Eli Lilly and Company, Indianapolis, Indiana 46206.

Lilly

# Dilantin®

(diphenylhydantoin)

PARKE-DAVIS

**In untold thousands of  
epileptic patients...  
Dilantin has been, and  
continues to be, the  
bedrock of therapy.**

DILANTIN is useful in the treatment of grand mal epilepsy and certain other convulsive states. Its use will prevent or greatly reduce the incidence and severity of convulsive seizures in a substantial percentage of epileptic patients, without the hypnotic and narcotizing effects of many anti-convulsant drugs.

**PRECAUTIONS:** Periodic examination of the blood is advisable. Nystagmus in combination with diplopia and ataxia indicates dosage should be reduced. The possibility of toxic effects during pregnancy has not been explored. **ADVERSE REACTIONS:** Allergic phenomena such as polyarthropathy, fever, skin eruptions, and acute generalized morbilliform eruptions with or without fever. Rarely, dermatitis goes on to exfoliation with hepatitis, and further dosage is contraindicated. Gingival hypertrophy, hirsutism, and excessive motor activity are occasionally encountered. During initial treatment, side effects may include gastric distress, nausea, weight loss, nervousness, sleeplessness, feeling of unsteadiness. Macrocystosis, megaloblastic anemia, leukopenia, granulocytopenia, thrombocytopenia, pancytopenia, agranulocytosis, and aplastic anemia have been reported. Nystagmus, lymphadenopathy, lupus erythematosus, erythema multiforme (Stevens-Johnson syndrome), and a syndrome resembling infectious mononucleosis with jaundice have occurred. DILANTIN is supplied in several forms including Kapseals® containing 0.1 Gm. and 0.03 Gm. diphenylhydantoin sodium.

Parke, Davis & Company, Detroit, Michigan 48232

The color combinations of the banded capsules are Parke-Davis trademarks. The orange-banded white capsule identifies Parke-Davis 0.1 Gm. diphenylhydantoin sodium; the pink-banded white capsule 0.03 Gm. diphenylhydantoin sodium.

**PARKER-DAVIS**

015R67

# *Lutrexin*<sup>®</sup>

**HW&D BRAND OF LUTUTRIN**

**3000 UNIT TABLETS**

**IN THE TREATMENT OF FUNCTIONAL DYSMENORRHEA AND SELECTED CASES OF  
PREMATURE LABOR AND 2ND AND 3RD TRIMESTER THREATENED ABORTION**

- LUTREXIN, the non-steroid "uterine relaxing factor" has been found to be useful by many clinicians in controlling abnormal uterine activity.
- Literature on indications and dosage available on request.

- No side effects have been reported, even when massive doses (25 tablets per day) were administered.
- Supplied in bottles of twenty-five 3,000 unit tablets.



(In vivo measurement of Lutrexin on contracting uterine muscle of the guinea pig.)

**THE  
JOURNAL OF THE  
Arkansas  
MEDICAL SOCIETY**

Owned by

**THE ARKANSAS MEDICAL SOCIETY  
And Published Under Direction of the Council**

**ALFRED KAHN, JR., M.D., Editor  
1300 West Sixth Street Little Rock, Arkansas  
MR. PAUL C. SCHAEFER, Business Manager  
218 Kelley Bldg. Fort Smith, Arkansas**  
**LITTLE ROCK BUSINESS OFFICE  
114 E. Second St. Little Rock, Arkansas**

OFFICERS OF THE ARKANSAS MEDICAL SOCIETY		
11. W. THOMAS, President	Dermott	
ROSS FOWLER, President-Elect	Harrison	
HARRY HAYES, JR., First Vice President	Little Rock	
C. F. WILKINS, JR., Second Vice President	Russellville	
GUY U. ROBINSON, Third Vice President	Dumas	
ELVIN SHUFFIELD, Secretary	Little Rock	
W. R. BROOKSHIER, Secretary Emeritus	Fort Smith	
BEN N. SALTZMAN, Treasurer	Mountain Home	
JOHN P. PRICE, Speaker, House of Delegates	Monticello	
AMAIL CHUDY, Vice Speaker, House of Delegates	North Little Rock	
ALFRED KAHN, JR., Journal Editor	Little Rock	
JAMES M. KOLB, SR., Delegate to AMA	Clarksville	
JACK KENNEDY, Delegate to AMA	Arkadelphia	
C. C. LONG, Alternate Delegate to AMA	Ozark	
PURCELL SMITH, Alternate Delegate to AMA	Little Rock	
MR. PAUL C. SCHAEFER, Executive Vice President, P.O. Box 1208	Fort Smith	

COUNCILORS		
First District	ELDON FAIRLEY	Osceola
	B. P. RANEY	Jonesboro
Second District	PAUL GRAY	Batesville
	HUGH R. EDWARDS	Searcy
Third District	PAUL MILLAR	Stuttgart
	L. J. P. BELL	Helena
Fourth District	T. E. TOWNSEND	Pine Bluff
	ALPERT W. LAZENBY	Dumas
Fifth District	KENNETH R. DUZAN	El Dorado
	GEORGE F. WYNNE	Warren
Sixth District	KARLTON H. KEMP	Texarkana
	JOHN P. WOOD	Mena
Seventh District	JACK KENNEDY	Arkadelphia
	ROBERT F. McCRARY	Hot Springs
Eighth District	WILLIAM PAYTON KOLB	Little Rock
	JAMES R. MORRISON	Little Rock
Ninth District	STANLEY APPLEGATE	Springdale
	HENRY V. KIRBY	Harrison
Tenth District	C. C. LONG	Ozark
	A. S. KOENIG	Fort Smith

The Advertising policy of this JOURNAL is governed by the PRINCIPLES OF ADVERTISING of the State Medical Journal Advertising Bureau, Inc., by the Advertising Committee of the Bureau and by the Council of the Arkansas Medical Society.

*EXCLUSIVE PUBLICATION—Articles are accepted for publication on the condition that they are contributed solely to this JOURNAL.*

*COPYRIGHT 1968 — By the JOURNAL of the Arkansas Medical Society.*

*NEWS—Our readers are requested to send in items of news, also marked copies of newspapers containing matter of interest to the membership.*

**SCIENTIFIC ARTICLES**

The Price of Leadership .....	457
Dr. Joseph A. Norton	
Medicare in Arkansas .....	459
Mr. Joe E. Elliott	
Medical Ethics .....	461
Dr. A. S. Koenig	
Dues—A Stewardship Report .....	464
Dr. Ben N. Saltzman	
Medicare Brought Up to Date .....	466
Dr. L. A. Whittaker	
The Ladies .....	469
Mrs. C. C. Long	
Arkansas Medical Society and American Medical Association Aids .....	471
C. C. Long, M.D.	
Attendance and Participation .....	473
Dr. Robert F. McCrary	
Medical Assistants .....	475
Mrs. Frances Reibe	

**FORUM FROM THE DEPT.  
OF OBGYN**

Evaluation of the Newer	
Pregnancy Tests .....	478
John B. Nettles, M.D.	
Elvin L. Norris, M.D.	
Sanford E. Hutson, M.D.	

**FEATURES**

What is Your Diagnosis? .....	484
Electrocardiogram .....	485
Arkansas Public Health at a Glance .....	486
Resolutions .....	487
Editorial .....	488
Medicine in the News .....	490
Announcements and Things	
to Come .....	496
Obituary .....	496
Personal and News Items .....	497
Proceedings of Societies .....	498
New Members .....	502
Women's Auxiliary .....	504
Book Reviews .....	505
Tuberculosis Abstracts .....	506
Index .....	508

## The Price of Leadership\*

Joseph A. Norton, M.D.\*\*

Leadership is not only a privilege—it is also an obligation and a responsibility. It is in this sense that I want to discuss the response of the Arkansas Medical Society and of you and me as individual citizen-physicians, to the changing patterns in health matters that are now confronting us all.

We are leaders in health matters by virtue of our vocational choice, our training and our experience. Many others may plan for health, but physicians treat patients—it is as simple as that.

Yet there are others trained in health matters—and this number and variety grows almost daily. You and I, and the Arkansas Medical Society, must be not only aware of these other legitimate members of the health team, but we must also encourage them, aid them, recognize their interest and ability, and work with them to survey, to plan, to solve our local health needs.

There is no place and no need for isolationism on our part—or for indifference, or for arrogance—and there is no excuse for apathy or for ignorance.

Planners, using the term generally, in and out of the medical profession, are showing us that there are health needs to be met, even in the face of our high standard medical practice in this country. The problem may be availability of care in one instance, or delivery of care in another, or economic matters again, or shortage of manpower or of interest in other situations—or a combination.

I guess it is natural for us, as individuals and as an organization to resent, to resist, to want to turn our backs on such revelations. But to do here what comes naturally is no help to us or to our community. Such an attitude is feeding the desires of our opposition—of those who make pleasure and profit accusing us, and who see central control over all activities of men as the

ultimate goal of society and of government.

Furthermore, between us and those just referred to—the indefinite “they”—are many, lay and professional, who are just as concerned about health needs, just as anxious to find and to meet them. They are very anxious for us, you and I and the Arkansas Medical Society, to begin to exercise the true leadership offered us in those areas.

This is what I would urge—that you and I and the Arkansas Medical Society meet head-on the various schemes and plans and organizations concerned with health desires and needs—that we respond, rather than just react, with our own special concern and background, to gather with us locally our friends—the other professionals and lay folk of our community. Then, on our own initiative, let us look into health matters in our own local communities. Let us seek out any gaps, any needs, hear any desires. And let us then plan to meet those legitimate hopes with our own resources and talents and energies. I feel much of this can be done without ever having to seek a grant or call an outside expert. Still, I can also see the value of cooperation with state and with Federal and with concerned and worthy voluntary health groups, where needed, to insure the best and result in health.

Leadership is costly—the price comes high. The exposure of leadership invites and must expect abuse and torment and misunderstanding, and often is little appreciated.

But the response of real leadership is sure and certain. You are physicians. You are citizens. Arkansas Medical Society is your professional organization. The county medical society is your local organizational professional unit. None other can excell you in qualification, in experience, in interest in health matters.

Make your concern now match your ability!

There will always be high level governmental questions for our concern—legislative, executive, judicial. We can meet them, as citizens, with a

\*Presented at the Arkansas Medical Society Officers' Conference, December 16, 1967.

\*\*President, Arkansas Medical Society, Donaghey Building, Little Rock, Arkansas 72201.

victory here, a defeat there, a compromise elsewhere. We are learning to function in that area. Political Action Committee activities are paying off over the country, and are in American political tradition.

But our concern now must be here in Arkansas, at home in our own communities, where programs of health matters—be they Medicare, Title 19,

comprehensive planning, Regional Medical Program, Office of Economic Opportunity, etc.—will stand or will fall medically, according to our involvement and our leadership. And leadership in these matters is our obligation and responsibility.

I plead with you to take your rightful place as leaders in health in Arkansas!



#### **Isoenzymes of Trypsin**

J. M. Miller (VA Hosp, Ft Howard, Md) *Johns Hopkins Med J* 121:329-332 (Nov) 1967

Eight isoenzymes were found when electrophoresis of trypsin was done on polyacetate Sepraphore III strips at pH of 8.4. The three cathodic and five anodic bands were enzymatically active as demonstrated by hydrolysis of benzoyl-DL-arginine-para-nitro-anilide. Activity was not found at pH 3 and 5. Trypsin is reported to autolyze at about pH 5 with autolysis leading to fragmentation and loss of activity. Inactivity would, therefore, be expected at pH 8.4. This pH was selected because the pH of the duodenum into which trypsin is excreted is 8.0, the optimal pH for enzymatic action is 8.4, and the optimal point of hydrolysis of the substrate used is 8.1. The fragmentation of denaturation, however, does not lead to inactivity and activity may be related to an unstable state.

#### **Congenital Hepatic Fibrosis**

R. J. Clermont et al (Hôpital Beaujon, 92-Clichy, France) *Canad Med Assoc J* 97:1272-1277 (Nov 18) 1967

Eight cases of congenital hepatic fibrosis are reported. The characteristic histological picture is a proliferation of both fibrous tissue and ductules in the portal spaces; the lobular pattern is preserved. The most frequent clinical manifestation is portal hypertension. Cholangitis, probably related to dilation of intrahepatic bile ducts, may be associated with portal hypertension. In one patient cholangitis was the only manifestation of the disease. Hepatic lesions are often accompanied by renal abnormalities; usually medullary sponge kidney, occasionally polycystic disease. In one patient with normal intravenous pyelography, renal lesions were found on kidney biopsy. Congenital hepatic fibrosis is transmitted as a recessive trait.

# Medicare in Arkansas\*

Mr. Joe E. Elliott\*\*

Dr. Thomas—Members of the Panel—Ladies and Gentlemen

A Report from Arkansas Blue Cross and Blue Shield about "Medicare in Arkansas" is a subject that could be discussed and debated for many hours.

To briefly review, Medicare was implemented both nationally and here in Arkansas July 1, 1966; and after 17 full months of operation, there have been generated many statistics and data as they pertain to Medicare.

A report that contains only statistics can be dull and boring, but our responsibility under a federal contract requires that we maintain accurate statistics as an administrative agent for the United States government for disbursing federal funds.

To say that Medicare is a gigantic program would be an understatement. It used to be that when people talked about a million dollars being spent for anything, it was news worthy. Today, we have to talk in terms of hundreds of billions of dollars before receiving too much attention.

In Arkansas, since July 1, 1966, through November 30, 1967, Arkansas Blue Cross and Blue Shield had disbursed here in the state of Arkansas, under Public Law 89-97, commonly known as Medicare, \$41,272,700.58. This dollar volume represented 352,694 bills paid.

Broken down into Part "A", Hospital Care; Part "B", Professional Services, and Extended Care Facilities, these dollars reflect 126,686 hospital admissions, 222,463 professional bills and 3,545 claims from extended care facilities (coverage in extended care facilities has been available since January 1, 1967).

Experience now indicates that admissions to hospitals in the state of Arkansas average about 7,550 per month. Part "B" bills for professional services now average 13,350 per month. While increasing slightly each month, we find that our Part "B" bills are continuing to grow.

When we compare the number of bills received for the first 12 months of Medicare operation to the first 5 months of this fiscal year, we are ex-

periencing an increase on an average of about 1,000 bills per month under Part "A", and under Part "B", we are experiencing on the average per month an increase of about 3,300. Due to the increase in the Part "B" bills, for the first 12 months of Medicare operation under Part "B" alone, we disbursed approximately \$4,778,000, and for the first 5 months of this fiscal year, we have already paid out \$4,774,000.

As you recall, under Public Law 89-97, people rendering professional service may elect to accept an assignment or deal directly with the Medicare recipient. We have experienced a drastic increase in the percentage of assignments taken by the physicians in the state of Arkansas. For the first 12 months of operation under Medicare, we were averaging about 48.5% of assignments being accepted by physicians. Figures show, for the first 5 months of this fiscal year, starting July 1, 1967, the percentage of assignments have increased approximately 10%. The exact percent figure as of November 30, 1967, shows 58.8% of the physicians in Arkansas accepting assignments.

There are a few other statistics that may be of interest to you, and I will give you these figures both nationally and here in Arkansas, because they are very similar.

In the United States, there are slightly over 6,000 general hospitals, generally described as short and long stay hospitals, with approximately 798,000 beds. We know there were approximately 5 million hospital admissions for Medicare recipients for the first 12 months of Medicare operation. We know further that nationally these Medicare recipients are staying in the hospital for approximately 17 days on the average.

These figures mean that Medicare recipients are using a little more than  $\frac{1}{3}$  of the available beds in the United States. This further represents the fact that generally speaking, of the total beds available in this country, Medicare reduces the number of beds for the general population.

In looking at the statistics in Arkansas, we have approximately 100 general hospital (short and long stay hospitals) with approximately 7,500 beds and approximately 67,000 in-patient hospital admissions with Medicare recipients staying on the average of 11 days in the hospital.

We again find that  $\frac{1}{3}$  of the available beds in

\*Presented at the Winter Meeting of the Arkansas Medical Society, December 16, 1967.

\*\*Vice President, Arkansas Blue Cross-Blue Shield, 601 Gaines St., Little Rock 72201.

the general hospitals here in Arkansas are being used by Medicare recipients.

Our experience in our regular Blue Cross and Blue Shield business certainly substantiates that Medicare has had a substantial impact on the availability of beds for the general population.

To administer this program here in Arkansas, we have had to increase our staff at Blue Cross and Blue Shield. In March and April, 1966, we had 111 employees, and it was at this time that we started tooling up to handle Medicare in the state of Arkansas. As of November 30, 1967, the end of last month, we had 226 employees. As you can see, we have doubled our employment. In addition to administering our regular business

in Arkansas which represents 325,000 Arkansans, we are administering Medicare with slightly over 221,000 Arkansans, we are administering the Champus Program for the Defense Department and they are unable to give us a count of how many people are covered under this program in Arkansas.

Title 19 at this point is somewhat hazy as to our involvement, but I think it is most interesting to note that we are now involved in an administrative capacity of handling a combination of government and subscribers moneys and now find ourselves being in excess of a 60 million dollar corporation involving over  $\frac{1}{2}$  million citizens of Arkansas.



#### **Studies of Tubular Alterations in Diffuse Renal Disease**

A. Caller and U. Garcia-Caceres (Dept of Pathology, Univ Cayetano Heredia, Lima, Peru) *Johns Hopkins Med J* 121:333-342 (Nov) 1967

The cellularity of the proximal convoluted tubules of six patients with acute renal failure was studied. In three cases the length of the proximal convoluted tubules was calculated by microdissection. There is a significant increase in cell density and in length of the proximal convoluted tubules studied. A possible pathogenesis of acute renal failure is suggested in the light of the findings of this study, namely, that the rapid increase in renal parenchyma causes intrarenal pressure changes which affect glomerular filtration adversely.

#### **Total Parathyroidectomy in Treatment of Secondary (Renal) Hyperparathyroidism**

C. S. Ogg (Guy's Hosp, London) *Brit Med J* 4:331-333 (Nov 11) 1967

Four patients with secondary (renal) hyperparathyroidism who were treated by total parathyroidectomy are described. The indications for surgery are discussed, particular importance being placed on the plasma calcium level. It is clear that the operation with subsequent vitamin D therapy allows the skeleton to heal satisfactorily. However, it has no effect on the course of the underlying renal disease and is contraindicated unless the renal disease is static or only slowly progressive or, alternatively, unless it is intended to treat the patient with intermittent dialysis or renal transplantation.

# Medical Ethics\*

A. S. Koenig, M.D.\*\*

Ethics is defined by the dictionary as the principles of morality, or the science of morals, or right conduct. Ethics, as they apply to medicine, have existed in one form or another since the time of the Babylonians around 2500 B.C. The statement of ethics with which most of us are most familiar, is the oath of Hippocrates which was conceived probably in the fifth century B.C. and represents a brief statement of principles and ideals to be cherished by the physician.

At the first real meeting of the American Medical Association, in Philadelphia in 1847, one of the two principal items of business was the establishment of a code of ethics. The original code was revised many times, the most recent being in June 1957 when the House of Delegates adopted the ten principles of medical ethics which succinctly present the basic principles of conduct which guide every physician who is a member of the American Medical Association.

It might be of benefit to all of us if we were to review at this time the ten basic principles, and perhaps make a few comments about some of them in the light of rulings of the Judicial Council of the American Medical Association. It is readily evident that the ten principles were not designed to be unduly restrictive on our professional activities but exist for the protection of our patients and colleagues from exploitation.

SECTION 1: "The principal objective of the medical profession is to render service to humanity with full respect for the dignity of man. Physicians should merit the confidence of patients entrusted to their care, rendering to each a full measure of their service and devotion."

This principle obviously indicates that the physician should be an upright, conscientious person whose prime object is service to humanity. His ability and knowledge should be such that he merits the confidence of his patients, and if he does not they are free to choose another physician.

SECTION 2: "Physicians should strive continually to improve medical knowledge and skill and should make available to their patients and

colleagues the benefits of their professional attainments."

This principle establishes the fact that a physician may seek a patent for a surgical or diagnostic instrument he has discovered, or may obtain copyrights on publications, methods and procedures, but any physician who obtains a patent or copyright and uses it for his own aggrandizement or financial interest to the detriment of the profession or the public is acting unethically.

SECTION 3: "A physician should practice a method of healing founded on a scientific basis, and he should not voluntarily associate professionally with anyone who violates this principle."

This section is clear and establishes the relationships between physicians, and cultists of all types. In this light the Judicial Council has determined that policy for association with osteopaths should be established at the state level. Where osteopaths are deemed to be practicing scientific medicine, voluntary professional relationships are not considered unethical. In this state it is still considered unethical to associate professionally with osteopaths.

It is unethical for a physician to consult with, or be associated either in teaching or publication, with any of the cults holding themselves out to be branches of the healing arts.

SECTION 4: "The medical profession should safeguard the public and itself against physicians deficient in moral character or professional competence. Physicians should observe all laws, uphold the dignity and honor of the profession and accept its self-imposed disciplines. They should expose, without hesitation, illegal or unethical conduct of fellow members of the profession."

In interpreting this section, the Judicial Council has pointed out that exposure of unethical conduct, incompetence or corruption should be first made before proper medical tribunals in executive session. Thereafter, if any doubt should arise as to the legality of the physician's conduct, the situation should be placed before the proper legal authorities.

SECTION 5: "A physician may choose whom he will serve. In an emergency, however, he should render service to the best of his ability. Having undertaken the care of a patient, he may

\*Presented at the Winter Meeting of the Arkansas Medical Society, December 16, 1967.

\*\*Councilor, Arkansas Medical Society, 922 Lexington, Fort Smith, Arkansas 72901.

not neglect him; and unless he has been discharged he may discontinue his services only after giving adequate notice. He should not solicit patients."

It is in compliance with this principle that many physicians have encountered difficulties with suits for abandonment and neglect when they have stopped to render first aid and emergency care to accident victims. It is for the protection of physicians in such instances, that several states have enacted so-called "Good Samaritan" laws.

This section has received a great deal of attention from the Judicial Council, particularly as it involves the solicitation of patients or patronage. The Council was quite clear in the statement which it made in 1962, and which was subsequently approved by the House of Delegates. "The principles of medical ethics proscribe the solicitation of patients or patronage. Solicitation, as used in the principles, means the attempt to obtain patients or patronage by persuasion or influence." Under this section the Judicial Council has considered many topics involving the issuance of announcements about the opening or removal of physicians offices, use of professional cards, signs on offices; the use of physicians' names in connection with civic enterprises or news stories.

**SECTION 6:** "A physician should not dispose of his services under terms or conditions which tend to interfere with or impair the free and complete exercise of his medical judgment and skill or tend to cause a deterioration of the quality of medical care."

This section has also been the subject of considerable attention by the Judicial Council, particularly as it applies to the relationship between physicians and hospitals and between physicians and corporations. Under this section, it has been ruled as unethical for lay corporations to employ physicians and practice medicine. The ethics of association of physicians with each other are outlined. The status of professional associations is clarified.

**SECTION 7:** "In the practice of medicine a physician should limit the source of his professional income to medical services actually rendered by him, or under his supervision, to his patients. His fee should be commensurate with the services rendered and the patient's ability to pay. He should neither pay nor receive a commission for referral of patients. Drugs, remedies or appliances may be dispensed or supplied by

the physician provided it is in the best interests of the patient."

It is under this section that the items of billing practices and fee splitting are discussed in considerable detail. It is in this area where there are still many infractions by physicians who otherwise consider themselves adherents of the principles of medical ethics.

For instance, it is quite a common practice for a physician to submit specimens to a laboratory for analysis and then bill his patient for this analysis without indicating on his statement the cost to him. In a ruling of the Judicial Council in 1963 the following statement was made. "The Council discussed the propriety of physicians charging patients for laboratory tests performed by someone else in excess of the cost to him. Some doctors justify the charge on the basis that they interpret the reports and assume the responsibility for the correctness of the reports. It was agreed by the members of the Council that a physician's bill should truly reflect the basis of his charges. Thus the physician's bill should indicate the actual cost of the laboratory report to him, but at the same time the physician might include a separate charge for his interpretation of the report."

It is also under this section that physician ownership and participation in drugstores, drug repackaging houses, and pharmaceutical houses have been stated as being unethical.

In medical office buildings attempts are not infrequently made to rent space to pharmacies and physicians, particularly pathologists and radiologists, on the basis of a percentage of income. This is unethical.

**SECTION 8:** "A physician should seek consultation upon request; in doubtful or difficult cases; or whenever it appears that the quality of medical service may be enhanced thereby."

This section is self explanatory. The comments of the Judicial Council point out that consultants should be punctual, and that the opinion of the consultant should be made readily available to both the attending physician and the patient; and that in situations where there is conflict of opinion, other consultation should be sought.

**SECTION 9:** "A physician may not reveal the confidences entrusted to him in the course of medical attendance, or the deficiencies he may observe in the character of patients, unless he is required to do so by law or unless it becomes

necessary in order to protect the welfare of the individual or of the community."

Under this section is discussed such things as privileged communication, and the canon indicates that the physician should be acquainted with the civil law of his own state concerning such privileged communications. The Council also discusses the maintenance of records by the physician and that these remain his property. The patient, however, is entitled to know the nature of his illness and the general course of therapy employed by his physician.

**SECTION 10:** "The honored ideals of the medical profession imply that the responsibilities of the physician extend not only to the individual, but also to society where these responsibilities deserve his interest and participation in activities which have the purpose of improving both the health and the well-being of the individual and the community."

The discussion of this section outlines in some detail the responsibilities of physicians to the public health authorities, and the relationship of physicians to the media of public information, such as the press, radio and television. In general it is the policy of the American Medical Association that medical publicity should be a function of the County Medical Society to act on behalf of the physicians in a community with the press and news media. However, this section does not proscribe the reporting of valid news.

The Judicial Council points out in the preamble to the Principles of Medical Ethics that the principles are applicable to all, whether they be individuals, groups, or clinics, and that the principles are intended to assist physicians in maintaining a high level of ethical conduct. They are not laws but standards by which a physician may determine the propriety of his conduct in his relationship with patients, colleagues, members of allied professions and the public.



### **Altered Synaptic Terminals in Cortex**

#### **Near Tumor**

H. J. Ramsey (Univ of Maryland Medical School, Baltimore) *Amer J Path* 51:1093-1109 (Dec 1967)

Samples of human cortex from the immediate vicinity of glial tumors were examined with the electron microscope. Two alterations in presynaptic endings were observed. Enlarged terminals containing branching cisternae were common. A second infrequent modification was the presence of spiral or concentric lamellae with a periodic substructure within the presynaptic terminals. Evidence of wallerian degeneration was limited. Some of the specimens contained senile plaques correlated with advanced age.

### **Urban Ecology: New Challenge**

A. A. Atkisson, Jr. (Univ. of Southern California, Los Angeles) *Arch Environ Health* 16:128-137 (Jan) 1968

In view of the segmental character of present environmental management systems, the challenge is for new behavioral patterns by all participants in the system. If decisional processes and organizational structures have been fractionated beyond possibility of early repair, then new behavioral properties must be exhibited by the human participants in those systems. Even if the decisional process has been fractionated, the researcher, decision maker, and program administrator must behave as though it were not.

# Dues – A Stewardship Report\*

Ben N. Saltzman, M.D.\*\*

For many years I have served the Arkansas Medical Society as its treasurer and member of the Budget and Finance Committees. This service has not been arduous, but it has been interesting and informative. I have been in a position to observe what great things can be accomplished by volunteers acting without pay, and by an efficient staff performing with limited funds. All these people have been dedicated to the task of providing the best in service to the ranks of organized medicine and to the people of our state.

The Arkansas State Medical Society dates back to 1870 when it was first organized. Historically it organized the State Health Department, helped establish the first medical school, helped create the State Medical Board, helped found the State Tuberculosis Sanatoria and the State Mental Hospital. It promoted the Uniform Narcotic Act. It established the State Cancer Commission.

Today, the Society maintains contact and working relationship with other organizations such as nursing, dentistry, Federal Agencies, the Farm Bureau, the Agricultural Extension Service, and many State Agencies, including the Health Department, the Welfare services, and the Department of Education.

The Society operates an effective Physician Placement Service. It maintains close liaison with the State Legislature. It has established a Medical Education Foundation for Arkansas and has funded it through dues of five dollars per member annually. The Society's information network is excellent, keeping us abreast of pertinent legislative changes, both on the State and National levels.

The Professional Relations committee is a functioning one, handling complaints from within and without the profession. Most importantly, the Society publishes a monthly Journal providing an outlet for scientific accomplishments as well as keeping the membership informed of its own activities.

The Arkansas Medical Society has carried on some organized activities, such as providing physicians for the first-aid room at the State Legislature, honoring our Congressional delegation at luncheons and dinners, instituting mass immuni-

zation programs, and investigating insurance and retirement plans.

The Society has served well in recent times in negotiating programs pertaining to military medical care, Kerr-Mills, Medicare, Welfare and other governmental programs.

The annual scientific convention, and meetings such as this are ongoing programs of the Arkansas Medical Society. The distribution of literature, the constant mailings to the membership, the Speakers Bureau, the contact with County Medical Society officers, the convocation of the various committees, the Council Meetings are all activities of the Society that make up its function.

Today, the Society has interested itself in new concepts such as Comprehensive Health Planning and Regional Medical Planning. It has membership on those advisory groups. Its fee committees have negotiated successful agreements relating to usual and customary fee payments in Military Medicare, Welfare, and Medicare. Without the Society such negotiations would not be possible.

We take for granted many of these activities. We simply say, "Let Paul Schaefer handle it.", and go about our business of looking after our individual practices.

Our executive vice-president is one of the best liked men in the society. His efficiency combined with diplomatic talent has served to lead this organization to a position of respect and accomplishment second to none in the country. His office handles details efficiently and thoroughly permitting him the opportunity of working with the physicians over the state in the task of accomplishing what must be done for and with the medical community. Our budget is small compared to those of most of the state associations over the United States. Yet, he is doing the job that he was hired to do. He is an executive performing the will of the men who do not have the time or the organization to do it themselves. He does not establish policy. You do this. He gets the job done.

Today, in business and in labor, organization is the keynote. Efficiency is the by-word. Yet all of this costs money. We are blessed with good leadership and selfless participation on the part of the

\*\*Treasurer, Arkansas Medical Society, 126 West 6th, Mountain Home, Arkansas 72653.

\*Presented at the Winter Meeting of the Ark. Med. Society, December 16, 1967.

individual physicians of our state. However, more and more we are being called upon to give of our time and efforts in our communities and in the other organizations to which we belong. We must depend on the staff that works with us. These people must be paid because their efforts on our behalf furnish them their only means of livelihood. We are in a competitive market for good employees today so salaries must also be competitive. The rents we pay, the goods we purchase and the transportation we must use are all part of the rising cost picture.

Specifically, our 1967 budget estimates an income of \$90,060.00 from dues, and approximately

\$66,039.00 from other sources totalling \$156,099.00. Our expenses are estimated to total \$133,584.00, leaving a nice cushion for emergencies. Such emergencies do arise, as with the phasing out of the Military Medical Care program in the hands of the state office.

As Steward for our State Medical Society funds, I can assure you that we are getting more than our money's worth. Whatever surplus funds we have are being well invested. Every opportunity is being taken to supplement our income with Journal advertising, with booth rental at annual meetings, and with wise investments. Such income and such dividends do not happen by themselves. Our Society is in good hands.



### **Hormonal Pregnancy Tests and Congenital Malformation**

I. Gal, B. Kirman and J. Stern (Queen Mary's Hosp. for Children, Carshalton, Surrey, England) *Nature* 216:83 (Oct. 7) 1967

One hundred mothers of babies born with meningomyelocele or hydrocephalus were questioned as to the drugs they had taken. The same information was obtained from a matched control group of 100 mothers of healthy children. Nineteen mothers in the survey group and 4 of the control mothers reported having received oral tablets for the diagnosis of pregnancy. Defects such as meningomyelocele originate before the closure of the neural canal and fusion of vertebral laminae during the second to 11th week of intrauterine life. The tests were administered at this time. It is possible that the difference significant at the 1% level emerged by chance; nevertheless,

there is need for a more detailed scrutiny of the role of hormonal preparations in the causation of various congenital malformations.

---

### **Ultrastructure and Origin of the Anitschkow Cell**

J. G. Pienaar (Veterinary Research Institute, Onderstepoort, Africa) and H. M. Price *Amer J Path* 51:1063-1091 (Dec) 1967

The ultrastructure and possible origin of the Anitschkow cell were studied in a lesion produced by implantation of foreign material in the myocardium of the rat. The results supported the theory of non-myogenic origin of the Anitschkow cell. Evidence supports the theory that this cell may originate from both pericytes and endothelial cells of the terminal vascular bed in the myocardium.

# Medicare Brought Up to Date\*

L. A. Whittaker, M.D.\*\*

Public Law 89-97 went into effect 1 July 1966. The cost of administering this law has sent the price of medical care spiraling out of sight, or so the government would have you believe. For example: according to hospital practice for August 1967, and this is for Part A and B of Title 18 only, the expenditure ranged from New York \$317.9 million for Part A and \$77.7 million for Part B. California was second with \$286.2 million for Part A and \$111.5 million for Part B. Arkansas had \$19,890,033 for Part A and \$4,820,000 for Part B for an average of over \$2 million per month.

It is interesting to note that in the first six months Part B paid out an average of \$219,000 per month, but in the last six months, the average jumped to \$577,000 per month.

From the above figures, it is easy to see where the greatest expense was. "In hospital stays!"

\*Presented at the Winter Meeting of the Arkansas Medical Society, December 16, 1967.

\*\*Immediate Past President of the Arkansas Medical Society, 621 South 21, Fort Smith, Arkansas 72901.

The average range in most states appears to be 4 to 1. That is, Part A, or the hospital expenses, were 4 times greater than Part B, or medical services.

While some of you may be dissatisfied with Blue Shield's administration of this program, I am told that Arkansas ranks 6th in the nation in administration of Public Law 89-97, and Blue Shield processed 142,000 claims for Part B.

The total bill for Part A and B of Title 18 was 3,040 billion of our tax dollars.

Recalling the days before Medicare, organized medicine and insurance actuaries predicted that the cost of government medicine would be 3 times greater than the estimates of the Department of Health, Education, and Welfare. These predictions have turned out to be true, and H.E.W. is trying to lay the blame on doctors. The government was warned that utilization would be greater in the over 65 age group, and that these people, thinking that they were getting free medical and hospital care, would therefore seek more attention.

## PART A

	MEDICARE LAW	PROPOSED MEDICARE LAW
Hospital Benefits	\$40.00 deductible per "spell of illness"—60 days in full, \$10.00 61st thru 90th, semi-private accommodation—private if medically necessary.  Physician original certification necessary as to necessity of hospitalization.	Same except coverage expanded from 90 to 120 days with \$20.00 per day co-insurance 91st thru 120th day.  Requirement of original certification dropped from law.
Outpatient Hospital Benefits	\$20.00 deductible for each period of a 20 day diagnostic study, 20% co-insurance by beneficiary. If non-diagnostic, payment is made under Part B (subject to \$50.00 deductible and 20% co-insurance).  Physical Therapy offered by hospital to outpatients outside of the hospital setting not covered.	All outpatient hospital services would be payable under Part B subject to \$50.00 deductible and 20% co-insurance.  Physical Therapy under supervision of a hospital given to outpatients outside the hospital setting is covered under Part B.
Blood Deductible	Patients pay for first 3 pints of whole blood furnished unless replaced on a pint for pint basis.  No deductible if blood furnished as Part B benefit.	X-Rays taken by technicians outside hospital setting are covered if under general supervision of physician.  Patient pays for first 3 pints of whole blood or whole blood derivatives. Replacement of first pint on a 2 for 1 basis—on other 2 pints on a pint for pint basis. Deductible applies to Part B benefits also.
Hospital Benefits Psychiatric or TB	The number of days a patient spends in a TB or psychiatric Hospital prior to entitlement to Part A benefits is deducted from the 90 days of inpatient hospital services for which payment could otherwise be made for the spell of illness which started with entitlement.	The reduction applies only to inpatient hospital days spent in a hospital primarily treating TB or for psychiatric care. Would substitute 120 days instead of 90 used in old law.

## PART B

## MEDICARE LAW

## PROPOSED MEDICARE LAW

Definition of Physician	Includes only M.D.'s, D.D.S.'s, D.M.D.'s and Osteopaths.	Definition broadened to include doctors of podiatry or surgical chiropodist with respect to functions he can perform by law of State in which he works. Routine foot care excluded.
Radiologists & Pathologists	Payment of the Professional component for hospital inpatients subject to \$50.00 deductible and 20% co-insurance.	Payment of professional component of radiologists and pathologists would be paid for hospital inpatients without a deductible or co-insurance.
Durable Medical Equipment	Provides only for rental. Regulations allow purchase under a rental-purchase agreement.	Provides for outright purchase of durable medical equipment or rental, whichever is more economical. Provides safeguards for economy in purchase of expensive equipment.
Exclusion of Certain Physician's Services	Excludes eye examinations for purpose of fitting or changing eye glasses.	Retains exclusion but amplifies it to exclude all eye examinations having any element of refractive examination.

tion, which they have done.

Doctors have not increased their fees. In the past, old folks of limited means were generally charged fees in keeping with their income, or no charge at all. Now, doctors are just charging usual and customary fees for all patients covered by 89-97.

After the initial confusion from both patients and doctors, the mechanics of the program have worked rather smoothly. While opposition to the principles of the government program has not vanished, the outcry of government controls has subsided to a quiet murmur. A trend has at last been established, and while the bureaucrats have consistently underestimated the cost of government care, their persistence has won.

Otherwise, how are things? Most physicians seem to feel that while they are still opposed to Medicare, they have learned to live with it.

What has our Medical Society been doing? The hard work, long trips, and many meetings attended by the president and the executive committee goes unheralded and usually unpraised.

On a national basis, the A.M.A. has negotiated with H.E.W. a simple, easily-filled-out form for Medicare patients, which is no small victory in paper conscious Washington. The A.M.A. has changed the certification and recertification of Medicare hospital admissions. The A.M.A. has won concessions involving the fiscal intermediary,

thus each state is allowed to designate its own carrier.

On a local level, our state Medical Society, after negotiating with several insurance carriers, selected Blue Shield as our carrier. Three fee committees have worked diligently and frequently to negotiate contracts with the Department of H.E.W. as well as with the Department of Defense on military dependent's contracts.

Our officers, acting with the advice of the executive committee and at the direction of our council, have made numerous trips to Washington and Chicago and elsewhere, at our expense, but sacrificing their time and talents for the good of our Society.

Our council, twenty members in all plus the executive committee, plus our legal counselor, will meet about 10 times a year. This year, our president has two extra government committees to work with. One, the Regional Health Planning Committee and the Governor's Statewide Health Needs and Planning Commission. These two government sponsored groups are offered the services of our state Medical Society.

Our executive vice-president and his very competent staff have done a meritorious job in serving our society. Many of the complaints from both patients as well as government officials have been ably handled by the people in our home office.

I know that some of our members have not been pleased with the discussions or the actions taken by our officers, our council, and our house of delegates, but where else could we get so much work from the very few, that benefits so many of us.

Our Medical Society has developed excellent rapport with our State Welfare Department, has negotiated new contracts with vocational rehabilitation, and has established the principle of usual and customary fees instead of limited or

restrictive fee schedules.

I would suggest that we unify our efforts with a deeper understanding of the problems presented by government controls. That we reevaluate our intention to serve our patients and then take action by providing the leadership, political astuteness, and dogged perseverance, and work to the end that we supply adequate, honest, and sincere medical services to all our people and not leave our fate in the hands of do gooders whose lust for power is their guiding principle.



#### **Role of the Physician in Environmental Health**

J. G. Telfer (535 N Dearborn, Chicago) *Arch Environ Health* 16:141-144 (Jan) 1968

The physician shares the concern of all men with their environment. The purpose of his concern is modified by the knowledge and experience of his profession, and by responsibilities for human health. He is made constantly aware of change and complexities of environment and of patterns of health. He sees an ever greater need for technological solutions to the problems, and for the team effort of scientists and the community effort of populations. The contribution of his profession becomes coordinated and enhanced through organization. Medical societies provide framework and method for success in the role of the physician in environmental health.

#### **Method for Concentrating Cancer Cells in Sputum**

S. W. A. Kuper and D. Shortridge (Brompton Hosp, London) *Lancet* 2:999-1000 (Nov 11) 1967

A method has been found for liquefying sputum by ultrasonic energy in the presence of a mixture of ascorbic acid, sodium percarbonate, and cupric sulfate (Ascoxal), an oxidation-reduction preparation, after preliminary formalin fixation of the cells. This allows the cells to be concentrated by centrifugation so that sections cut at different levels of the deposit provide representative examples of all cells present. The technique may be more sensitive than are ordinary sputum smears in revealing tumor cells, and there is considerable saving of time for the pathologist. The method is suitable for postal specimens.

# The Ladies\*

Mrs. C. C. Long\*\*

**I**t gives me great pleasure to speak to you about "The Ladies", or your other half, the other half of this medical family, the auxiliary. The auxiliary is an organization which was formed to help the doctor in promoting health and health education.

Like any other family, the strength and unity of auxiliary depends upon the sincerity of its members and the philosophy that motivates it. The philosophy of the auxiliary is to promote good will, not only in the community with its educational projects but within the medical family. Maintaining good will in any family is a great challenge but it can be done if we can be a good partner to our physician husband.

Being a good partner doesn't just happen—it is the result of much effort on the part of each to understand the other; the sharing of the work load; and joys and rewards of service to others. This uniting of the medical family is the most important thing we can do because unless the doctors and their wives have confidence in and respect for each other we can't expect the community to have confidence in and respect for them.

What the public thinks of organized medicine depends largely upon the individuals. You see, to the public each individual member of the organization *is the organization*. What you or your wife do or do not do is a reflection upon your profession whether we like it or not.

What is your attitude toward your organization? Have you become depressed and disillusioned with medicine? When you chose your profession no ambition for power or fame or glory or riches prompted you in your choice of a career—rather it was your interest in science and your decision to give your life to the care of the sick. It was the highest idealism motivating you when you determined on the hardest, longest, most expensive preparatory education for your life's work. Have you let the attitude of the public toward medicine affect your thinking? Have you begun to have doubts too or are you still steadfast in holding that this is still the most

honored profession in the world today?

What is your attitude toward auxiliary? Do you realize that it was your idealism, your willingness to make sacrifices, your sense of values which attracted us to become your partner, and which we wished to share with you and keep alive? No single influence helps to mold or sustain a physician as do we, his nearest partner in this business of life.

I have had doctors' wives say to me, "I'd be active in auxiliary if my husband acted like he wanted me to, but I can work my head off on some project and he doesn't act like he even knows it." I know this is a partnership affair too—this equal sharing of praise for the other's good works. An omission that we all are guilty of. But a beginning place for both to correct for better organizations.

Then I've had wives say that they'd be active in auxiliary if they knew what to do. Of course, we can give them a list of worthwhile activities a mile long from state and national but what they really need is your guiding hand in your own community in helping solve local health problems. We could do so much more so much better for medicine and you *if* you would take the time to discuss current health needs with us or your county auxiliary.

Remember the Sabin Clinics, Diabetic Clinics, and now Measles Clinics? We worked together here as a team and did a tremendous job in our own communities, it was good public relations, and it was also good for the medical society auxiliary. Here we were all joined together in working for one common worthwhile cause.

You called on us to help fight Murray-Wagner-Dingle; Forand; King-Anderson and other types of legislation equally as bad for medicine, and we did most effectively. You asked us to help in electing representatives with the same basic beliefs as ours, to Congress, and we have. When called on, we have served you effectively and willingly.

There is another great need now where we should be working closer together to solve and this is in the health manpower field.

Dr. Dwight L. Wilbur, president-elect, A.M.A., told us at Fall Conference that "fifteen years ago, health was this nation's 5th largest employer.

\*Presented at the Winter Meeting of the Arkansas Medical Society, Little Rock, December 16, 1967.

\*\*President-elect, Woman's Auxiliary to the American Medical Association, 110 West Commercial, Ozark, Arkansas 72947.

Today it ranks 3rd, behind only agriculture and construction. By the early 1970's it is expected to be first, both in number of people employed and in amount of money spent for its services."

Together we should study our own state and community situation. We should then organize a health manpower committee jointly. Then we should seek cooperation of other interested groups, such as other health and medical organizations, hospitals and their auxiliaries, extended care and home care groups, voluntary health agencies, educational institutions, health planning bodies and through the public. Medical societies should take the lead in finding out local needs and in determining how local needs can be met.

And finally, our most important joint function can be to continue and increase our activities to recruit young men and women into all of the health professions and occupations.

Our efforts should particularly be aimed at the high school, junior college and university levels.

You and your partner, your local auxiliary, should be ready to answer questions from students in your own community on medicine as a career, and help these young men and women find the answers to questions about the other related ca-

reers. I would suggest that you take time from your busy practice to help with career days in your local schools. I am sure that you will instantly have many doubts about your being the right person for this job, but who could do it better? I believe that these young people will ask you, their doctor, many questions that they might hesitate to ask an outsider.

Just as the sick person looks to the physician for help, society as a whole looks—or must be able to look—to the Medical Association for leadership both in caring for the individual patient and in solving the over-all health problems of the entire community.

Equally important, the Medical Society and the entire medical profession need to be able to look to the auxiliary for assistance in the gathering of information, the recruiting of people into the field, and the carrying out of many responsibilities in these areas involving the community as a whole.

It is a challenge worthy of this organization.

Third Annual Officers Conference  
Arkansas Medical Society - 1967

Mrs. C. C. Long



#### **Navy Tuberculosis Control Program**

G. D. Hanzel (Bureau of Medicine and Surgery,  
Dept of the Navy, Washington, DC) *Arch Environ Health* 16:22-23 (Jan) 1968

The routine use of tuberculin skin test and chest roentgenograms comprise the tuberculosis surveillance program. All recruits entering a recruit training center are to be skin tested by the Mantoux technique using purified protein derivative standard five toxic units (PPD-S 5 TU) and one or more other antigens prepared from mycobacteria other than *Mycobacterium tuberculosis*. In addition, annual tuberculin tests are mandatory for all United States Navy and Marine Corps personnel whose most recent tuberculin reaction is recorded as negative. When a case of active

tuberculosis is discovered by the surveillance program, the contact investigation program is activated. All patients with active tuberculosis are transferred for definitive therapy to the naval hospital. If a case is discovered aboard ship, all members of the ship's crew are considered intimate contacts. When an active case is discovered at a shore installation, the actual intimate contacts are surveyed at the same time intervals as those aboard ship. All personnel identified as converters are admitted to the nearest navy medical facility for three days. The marked increase in the diagnosis of the disease in its minimal stages, and the concomitant decrease in the occurrence of moderately and far advanced cases indicate the success that the program is enjoying.

# Arkansas Medical Society and American Medical Association Aids\*

C. C. Long, M.D.\*\*

The subject of my talk is The Aids Provided by the Arkansas Medical Society and The American Medical Association. This is a broad subject that covers practically everything that has to do with the practice of medicine. It pertains to the way in which we as physicians are associated together, the way in which we as physicians care for our patients and the way in which we as a profession are able to cooperate with other groups, to compete with other groups for our fair share of due consideration and to promote our interest in the care of the public's health.

As far as the State Medical Society is concerned, the Medical Association has its *central office* where our records are kept, and where we can obtain the various services and aids which our society provides for its respective members. In this office we have many dedicated persons who are always willing to do anything possible for the benefit of each and every one of us as practicing physicians. A phone call to this office always results in prompt and efficient service. *Through this office in our State Medical Society we receive many aids and benefits which we become accustomed to receiving and to which many times we probably do not give a second thought.* One of the most important ones I think to practicing physicians in the state of Arkansas and the people in general is a *physician placement service* which is one of the best in the country. The service keeps a current file on the needs of the state in various communities, various physicians wanting associates and also is in constant contact with as many physicians as possible that are seeking locations, want to move, or want to establish a practice. They keep detailed information as to the kind of practice, the type of community each is interested in, and make every attempt to bring them together so that more physicians will be established in the state of Arkansas and bring better care for the people and provide the physicians of the state with help and assistance.

Our Arkansas Medical Society has a very important function as an *intermediary in negotia-*

*tions with various groups and organizations, particularly in the last several years this has become more important.* At the present time we have committees in the Arkansas Medical Society that function in regard to the overage 65 Medicare group, composed of twenty-one physicians selected for your State Society by your Executive Committee. They have met on numerous occasions with the Blue Cross-Blue Shield people who have acted as the intermediary for the Federal Government in working out plans and programs to make this Medicare law work as well as possible. These twenty-one physicians—I know them all well, and I can speak for each and every one of them—are not in sympathy with Federal control of medicine, neither was the Blue Cross-Blue Shield as the intermediary organization in sympathy with this principle. They fought this law as long as possible. They realize it is the law of the land, and they devote their time and effort to making it the most painless and best working plan that we can have. Likewise there are intermediary groups functioning to negotiate with the Veteran's Administration on a military Medicare basis. This requires a great deal of time and effort. *Your Executive Committee has spent numerous hours in negotiations with the Welfare Directors and the Welfare Board of the State Government in working out the present plan which the Medical Society has indicated they wanted on the customary and usual fee schedule.* Also they have negotiated with the Rehabilitation Service for a similar type of plan. *The Medical Society is the only means whereby the members of the State Society can have a unified voice and a concentrated body of representatives.* This is necessary if we as physicians are to receive just consideration and be able to provide good medical care for our patients.

Another important function of our state Medical Society is *its legislative committee.* This group of doctors are extremely devoted and they have spent a large amount of their time particularly during the biennial legislation session working with the members of the legislature in order not only to promote legislation that is beneficial to

\*Presented at the Winter Meeting of the Arkansas Medical Society, December 16, 1967.

\*\*Councilor, Arkansas Medical Society; Delegate to American Medical Association; 110 West Commercial, Ozark, Arkansas 72949.

the health and welfare of the people of our state and to the Medical Society, but also in helping to defeat legislation which we feel is detrimental to our ideals of good health for everyone. Our Medical Society also maintains liaison and contact with the paramedical groups of Pharmacy, Nursing, Dentistry, etc. in our state. This is extremely important because we must constantly be attentive to this part of our obligation because one group or profession can not function in the health field without affecting the others.

The Medical Society is responsible also in the *field of medical ethics*. The aids which are provided in this field are guidelines for us all in establishing our practices and helping us stay in the so-called straight and narrow way to provide better medicine. Medical ethics have been developed over the years as a means, or as a guide, by which the best medical care is provided for our patients. The Medical Society functions in a way to see that we all know and uphold the principles of medical ethics and follow these principles. The Medical Society provides an arbitration committee and a grievance committee that is able to work out problems between physicians and patients and physicians and a third party, insurance companies, etc. These function in councilor districts and are very beneficial in helping keep medicine straight and in keeping a good image before the public.

Through our Medical Society we are able as members to obtain malpractice insurance that gives us protection, also sickness and accident insurance. These are functions of the Medical Society and are aids to the practicing physicians of the State. In many instances, if we were not organized into a group, with group buying power and the attractive nature of a large number of members we would not be able to obtain these benefits at an acceptable rate.

The Arkansas Medical Society provides continuing education for the members of the State through our State Journal, through our State Medical Meetings, regional meetings, special group meetings that are sponsored and provided by our State Medical Society. These are a few of the things, the aids, that the State Medical Society provides to us as members.

The AMA in large part carries on a similar type of activity as our state Medical Society. However, it is on a national basis in terms of legis-

lative matters, interpretations of rules and laws, arbitration with Boards, HEW, national labor unions and others that the officers and staff of the AMA is able to meet with. In many instances they are able to have a definite effect that is beneficial to us as physicians and to our patients and to the rest of the public.

The Medical Association Nationally is always alert in detecting quackery and charlatans, and can help bring these to the attention of the proper authorities and help to get off the market and protect the public from wasting their money and health in being exploited by these people.

Of course the American Medical Association also has a physicians placement service that operates in a similar way to that in our state. The American Medical Association has a large library where any member may receive articles, photocopies, abstracts on any medical subject. Or, if he has a problem in regard to his practice of medicine and wants advice, wants recommendations, or wants some literature reviewed concerning this particular thing, this is made available to him at any time by a large staff that works on this continuously. There is a large amount of educational material that is supplied by the AMA in terms of the AMA Journal, The Specialty Journals, patient information booklets and files, medical meetings, two annual sessions of AMA, plus smaller meetings of which there are two to three thousand each year all over the U.S., to help promote the knowledge among the physicians.

There is a great amount of research being done by the AMA, the results of which will be of benefit to us now and in the future. With these few remarks, I know I have left out a great many important things, but I think you can see that the State and the National Medical Association provide aids to us, as practicing physicians, that enable us to do the things better that each and every one of us want to do and would do if we were able. But without organization, without representation, without the combined strength of our membership we would be unable to do these things in education; in legislation; to establish this code of ethics and maintain it; to provide the care of our patients; and the representation which we as the medical profession and as individual doctors must have if we are to continue to provide high quality medical care for our patients in this country.

# Attendance and Participation\*

Robert McCrary, M.D. \*\*

Doctor Townsend, Ladies and Gentlemen of the Arkansas Medical Society and particularly those of you who are County Medical Society Officers:

**T**hank you for allowing me to be with you to discuss briefly the great importance of attendance and participation in our state and county programs in these rather perilous times for medicine. I was delighted when I was asked to give this paper, because I am now in my fourth year of participating in the state program of our Medical Society as councilor for my district. Throughout the four year period, and I am obviously a neophyte, I am constantly re-impressed by the number of wonderful, wonderful people who give so unselfishly of their time, and their knowledge in an effort to promote medicine in Arkansas. I am also continually amazed at my ignorance as to state affairs, having sat on the sidelines nine years in the practice of medicine in Arkansas, never lifting a finger to help. You might say that I have been really "Brain-Washed" in the last four years.

I do not know a Doctor in this state whose basic premise for practicing is not "to help someone else". Yet he does not seem to reconcile this with his own welfare.

I think the very participation of Federal Government in our affairs and the ever-growing restrictions that are being placed upon us in the field, and the very few counter-measures we apparently have to combat, should unite us into such a close-knit group we could not be assailed further. Though we all are aware of this, too few additional members are joining the counter-measure of knowledge and participation in our state medical program. This reminds me of a story.

A fellow went into a restaurant to buy a steak. When it was set down in front of him, he cut the steak and took a bite. Suddenly he was aware that he had left his false teeth at home. This, of course, upset him a great deal, so he picked up the plate and handed it to the man sitting next to him.

"Friend," he said, "would you like to have this steak?"

The man, immediately suspicious, asked,

"What's wrong with it?"

"Nothing," the first fellow replied, "but I wear false teeth, and I've left them at home."

The second fellow said, "Let me help you. Here," and he reached into his pocket and pulled out a pair of dentures. "Try these."

The first fellow put them into his mouth, but they didn't fit too well.

The second fellow said, "Well, here's another pair. Try these," as he reached into his other pocket.

The man who had ordered the steak hesitated, eyed the other fellow a minute, then asked, "By the way friend, are you a dentist?"

"No," the man replied, "I'm an undertaker."

Too often we find help in rather strange places.

By attending and participating on a state level, those of you who are County officers, can bring back to your component societies the ever-changing ideas and programs that are being adopted by your State, in an effort to promote unity, knowledge and participation in the state program. As I see the problem, and this is strictly from the viewpoint of a person who has not participated as fully as he should, we are quite obviously deficient in helping ourselves.

Attendance and participation may seem like this—We go to the Medical Society meetings. We attend the cocktail parties. We go to the dances, have a good time and hear fine scientific papers.

(Incidentally, the scientific program, I feel, in our State Society has progressed magnificently in the last two to three years.) After we have had our relaxation, which we all need, we pack our little suitcases and go home. We feel very snug because we attended the State Medical Society meeting. We took our income tax deductions, had one heck of a good time and heard some great papers. We listened to Doctor Bones discuss attaching the heart to the liver, etc., knowing full well we were not going to do this in our practice. But, what did we learn?

We forgot about the House of Delegates! We forgot about the Councilors' meeting and the Executive Board meeting. And yet, in these meetings all of the policies which affect you and me are initiated, voted upon and put into practice. We return home and receive a letter from the State Medical Society, telling us that we have delegated

\*Presented at the Winter Meeting of the Arkansas Medical Society, December 16, 1967, Little Rock, Arkansas.

\*\*Councilor, Arkansas Medical Society, Meyer Building, Hot Springs, Arkansas 71901.

so-and-so to do so-and-so and authorized so-and-so to do so-and-so, etc. How 'bout that? Our business, the means by which we live and feed our families, has been delegated and relegated to twenty or thirty people who are willing to give of their time and talent.

These few conscientious folks give according to their ability, because of their interest in you, that which they deem best for our State as a whole. This small group directly affects our livelihood, but it also affects our individuality which we have so long cherished and fought to obtain and maintain.

They are not sure, any more than I am sure,

as a councilor, when I vote on certain problems that it may be a help or a hindrance. My opinions are naturally limited by my experience and environment, though I can be influenced by those whom I recognize as more knowledgeable. I would much rather be influenced by my constituents, the people whom I've been chosen to represent. However, my colleagues cannot tell me how to vote unless they are knowledgeable. Therefore, I hope and pray as members of the Arkansas Medical Society and as Officers of Arkansas Medical Society, you will become knowledgeable, through participation and attendance, in an effort to promote 100% the progress of medicine in Arkansas.



#### **Treatment of Bacterial Infections With Hyperbaric Oxygen**

T. T. Irvin and G. Smith (Univ of Aberdeen, Aberdeen, Scotland)

*Surgery* 63:363-376 (Feb) 1968

Two patients, one with a clostridial infection and the second with gangrene of the skin, were treated with intermittent hyperbaric oxygen therapy. Both patients recovered. Inhalation of hyperbaric oxygen may be of value in treatment of gas gangrene. Its use might be successfully extended to treatment of infections by microaerophilic organisms. When aerobic infections occur superficially as in burns, local application of hyperbaric oxygen may be of distinct value. In order to determine the true value of hyperbaric oxygen, further clinical and experimental studies are needed in larger groups of patients with various forms of infection.

#### **Epidemic of Hepatic Distomiasis: Review of 50 Cases**

J. Giraudet (Hôpital Cholet-49, Cholet, France)  
*Presse Med* 76:189-192 (Jan 27) 1968

A sudden epidemic of distomiasis occurred in Cholet, France, afflicting a total of 75 patients. Fifty cases were treated in the hospital. Ages ranged from 3 to 74 years; 29 patients were women and 21, men. Gallbladder pain occurred in 72% of the cases, fever in 70%, pruritus and urticaria in 6%, and right pleural reactions in 6%; there were no complaints in 18% of the cases. Hyper-eosinophilia was the first symptom leading to diagnosis: half of the patients had 40% to 60% eosinophils, two had 70% to 80%, and two had less than 10%. Parenteral dehydronetidine was given to 48 of the patients. A followup study on 16 patients treated with emetine, one year later, showed that 6 (37%) still had the parasite.

# Medical Assistants\*

Mrs. Frances Reibe\*\*

I would first like to thank you for the privilege of being here today, and then I would like to discuss with you, briefly, what your medical assistant can do for you and how the Medical Assistant Associations—Local, State and National—can be of value to you through your own Medical Assistant.

It can rightfully be stated that the career of a Medical Office Assistant is entirely different than it was twenty years ago.

There was a time when the office assistant was scarcely more than an ornament. She answered the phone and made appointments. Her duties were mainly secretarial—only occasionally did she assist with treatments. However, an attractive young lady in a crisp white uniform usually made a favorable impression on the patients.

In modern medicine of today, the Medical Assistant occupies a key position between the physician and the patient—

She's a girl with a purpose, a girl with a smile,  
A girl with a job that is truly worth while.

She plays many roles and with each is persistent—

Who is this girl?? She's a Medical Assistant.

From nine till ?? whenever—she answers the phone,

She books and reschedules with never a groan.  
To germs and diseases she must be resistant—  
Who is this girl?? She's a Medical Assistant.  
She sends out the bills and she posts all the cash.  
She steams up the lab and she hauls out the trash—

Her talents are varied—promotion is distant  
But her work brings reward—She's a Medical Assistant.

To help her physician to comfort and heal;  
To sprinkle some sunshine, must be her ideal—  
A service of loyalty, always consistent  
These are her aims—The Medical Assistant.

A busy physician *today* cannot practice without a medical assistant—or two. The modern doctor requires a *trained* office assistant to efficiently handle the myriad of details brought about by our tax structure—the expansion of health insurance—public assistance programs—the never-ending red-tape of Medicare and the many business rec-

ords now required by our government agencies.

I am sure that most of you are aware of the many duties that *your* Medical Assistant must assume—and she can be of invaluable service to you. There are numerous ways in which your medical assistant can be of service to you and can relieve you of a lot of tiresome and time-consuming details—providing *always* that it is *your* wish that she do so. However, a harmonious working relationship between the Medical Assistant and her employer depends to a large extent upon a clear-cut understanding of what each may expect from the other.

The doctor is a *physician first* and a *business man second*. The Medical Assistant must plan, study and act so that she can assist him to accomplish *both* objectives. Many physicians still speak of their Medical Assistant as a secretary—but this young lady *many times* helps prepare the patients for examination—prepares the syringes and medications for the doctor to use—and often does simple laboratory procedures. All of this in *addition* to her expected duties as receptionist, bookkeeper, typist, file clerk, purchasing agent and insurance clerk . . . This conglomeration of skills makes her a trusted and valuable "Assistant"—much more to be desired than just a "secretary". A tactful girl who can do all these things and at the same time answer the phone—converse with the many "detail men" and salesmen who call at the office each day—protect the doctor from unnecessary annoyances and keep his finances in order—is worth her weight in gold!!

Good training is essential—but the girl herself must be made of the "right stuff". The office assistant with technical competence plus a warm, sympathetic touch—is her doctor's most valuable public relations agent. She is the doctor's personal representative to his patients. The impression *she* makes on his patients strongly influences their opinions of the physician himself. She is the doctor's official "hostess"—the person most responsible for the comfort and well-being of the patients from the moment they enter the office until the end of their visit.

Most physicians will take little time for records and accounts and depend heavily on their assistants to do this for them. Few, if any, Medical

\*Presented at the Winter Meeting of the Arkansas Medical Society, December 16, 1967, Little Rock, Arkansas.

\*\*c/o Dr. Kenneth R. Duzan, 443 West Oak, El Dorado 71730.

Assistants realized when they first sought employment in a doctor's office that collecting accounts would be no small part of their duty. In some measure, every medical assistant is a "bill collector" . . . The good will, or ill will of patients, often depends upon the way that the billing and collecting of fees is handled. In most offices the doctor's *assistant* shoulders the bulk of this responsibility.

She also handles the doctor's correspondence and routine office records. She must have a general knowledge of the mailing services of today and should know all the different classes of mail. She can take care of all your travel arrangements, reservations and accommodations, leaving you more time for service to your profession and to your patients.

She can assist you with your administrative planning, act as office manager, business administrator or personnel manager, providing *always* that it is *your wish* that she do so.

She is your official "office housekeeper" and must see that the reception room and treatment rooms are cleaned daily and that supplies are checked each morning. She must see that there is a place for everything and that everything is in its place.

She also serves as somewhat of a "maintenance man", insofar as the care and maintenance of the office equipment and machines are concerned. This is not only a matter of keeping it clean, but a matter of economics. Equipment is expensive and if your medical assistant keeps it clean and properly cared for—it will give better and longer service to you and to your patients.

Some doctors insist upon opening their own mail—even to the advertisements—while others would consider this a waste of his valuable time. Your Medical Assistant can open and properly arrange your mail and conserve this time for you—if it is your wish that she do this.

Screening your telephone calls is another way. The telephone robs the doctor of more of his time than any other one thing. But here again—it must be the doctor's wish that she do so.

The doctor must be able to help the patient physically, but to help the patient spiritually, he needs the cooperation of his medical assistant. No one can over-estimate the value of a warm and friendly greeting—a smile—a kind word—an expression of sympathy and understanding—a sincere interest in the patient's troubles.

I attended a symposium, recently, where I heard it stated that *today's* Medical Assistant must truly thrive on L.S.D.—A little different form than that used by the "Hippies" in their Psychadelic World—The L.S.D. that a competent Medical Assistant must have is Love, Service and Dedication.

*Love:* The Medical Assistant must love her work and think of her position as a career and not just a "job". A job is a position where you can start at 9:00 A.M. and leave at 5:00 P.M., whether your work is finished or not. As you know, the Medical Assistant cannot do this. Sickness knows no office hours and has no time limits. Many times your assistant may have to work late, or miss her lunch hour in order to help you with an emergency. It has been stated that a "career" is a job we like doing so well that we'd want to do it for nothing if we weren't fortunate enough to find someone who would pay us for it. (I think most medical assistants feel this way) . . .

*Service:* The successful Medical Assistant must have a deep seated desire to want to help people from all walks of life and to be of service to them. Her purpose in life *must be* to serve and not to be served.

*Dedication:* The title "Medical Assistant" is a respected one and carries with it pride and dignity. I am sure that there is no other field open to professional women that offers more real satisfaction and reward than that which comes to a *dedicated* nurse or medical assistant.

You may be wondering now—how can the Medical Assistants Organizations be of value to *you*. Through membership in the professional societies—local, state and the American Association of Medical Assistants—*your own* medical assistant has the opportunity to receive benefits much on the same order as those that you receive from your medical society and the A.M.A. Our organizations are patterned after yours.

The *main* objective of our organization is EDUCATION. Most county organizations have monthly meetings with programs that are composed of speakers who are experts in their field. Programs on Public Relations; Proper Telephone Techniques; Lawyers, speaking on Medico-Legal aspects; C.P.A.'s, on bookkeeping, tax forms, quarterly returns, etc.; Pharmaceutical Representatives bringing us the latest developments in drugs and medications; Blue Cross-Blue Shield Representatives speaking on their latest coverage—Medicare and Medipak; Members of the Wom-

en's Auxiliary to A.M.A. and members of AMPAC who keep us posted on all the latest developments in political education. We try to keep *all* our programs on an EDUCATIONAL LEVEL. I am sure that many of you have been asked to speak to some of these groups on subjects relating to your particular field of medicine.

Members in the State and National organizations are afforded the opportunity to attend educational seminars and symposia at a very minimal fee, covering all types of subjects including Human Relations, Personal Adjustment, Business Communications (oral and written), Accounting, Credit and Collections, Medical Ethics and Etiquette, Office Emergencies and numerous other topics. This gives them an excellent refresher-type program at least once or twice annually.

Members share in other educational opportunities—such as study outlines and study hints through material released by the National Association for the State and Local Educational Chairmen to use. They can have group study programs by groups of members, or the entire membership of a county group.

For the *first time* ever, the qualified medical assistant has been given an opportunity to pass a special board examination and become a certified medical assistant. This is an opportunity for the medical assistant to *voluntarily* upgrade her position. It is *not* a requirement for membership in the association; it is *not* a requirement for holding or obtaining a job as a medical assistant—but it *is* an opportunity for the medical assistant to continue her education by taking advantage of these educational programs through regular

monthly county meetings—and through publications of the state and national organizations which are excellent means for educational materials. The articles are written by top experts from all over the country on topics which pertain to the medical profession and to the doctors office. I am most happy to say that the Arkansas State Medical Assistants Society Bulletin won Second place in the national contest this past year.

Members also have the opportunity of attending annual conventions—state and national—which always stress educational programs and leadership training.

It gives the members the right and privilege to wear the national and state pins which show your patients, fellow workers and visitors who come into your office that your medical assistant cares enough to belong to an organization for *self-improvement* in order that she may better serve them and the doctor by whom she is employed.

Values attained from membership in the Medical Assistants Associations cannot be measured in dollars and cents—and the value YOU will receive through your medical assistant is *unlimited* if your medical assistant will avail herself of this opportunity and you will encourage her to do so.

The meaning of membership in our organization—the meaning of belonging—is the sharing of knowledge and of talents. Sharing stimulates us and makes us better persons for having shared.

Thank you again for the opportunity of having been here today and sharing with you some of my ideals of the Medical Assistant and our Association.



### **Pharmacological Studies of Methotrexate in Man**

W. Z. Zurek et al (Lahey Clinic Foundation, Boston)

*Surg Gynec Obstet* 126:331-338 (Feb) 1968

The effect on the pharmacodynamics of methotrexate and tritiated methotrexate using different doses schedules, routes, and duration of administration was investigated in 216 patients with advanced cancer. Periods of study varied from three days to six weeks. Single doses of methotrexate, by

whatever route, are rapidly absorbed and rapidly excreted in the urine. Serum levels become insignificant within four to eight hours after inoculation. The relationship of dose to serum level is not directly proportional; however, by continuous and prolonged administration, either by 24-hour intravascular infusion or divided daily doses, continuously high serum levels can be maintained for prolonged periods. No differences were noted in serum level or excretion pattern between continuous intravenous and intra-arterial infusion.



STUDIES FROM  
THE UNIVERSITY OF ARKANSAS MEDICAL CENTER  
THE DEPARTMENT OF

## OBSTETRICS AND GYNECOLOGY

WILLIS E. BROWN, M.D., Professor, and Chairman

STACY R. STEPHENS, M.D., EDITOR

### Evaluation of the Newer Pregnancy Tests

John B. Nettles, M.D.\*; Elvin L. Norris, M.D.\*\*; Sanford E. Hutson, M.D.\*\*\*

From ancient times man has had the desire to correctly diagnose early pregnancy and has used physical changes, food penchants, and urine tests. The ancient Egyptians noted chloasma and the production of nausea following ingestion of a mixture of human milk and watermelon pulp. Hippocrates prescribed honey at bedtime and if the woman had a restful sleep she was not likely to be pregnant. Pliny observed headaches, giddiness, and dislike for meat as a sign appearing as early as ten days after conception. Galen, before Hegar, discovered the softening of the uterine cervix. Soranus, during the early Christian era, observed that following conception there was less moisture in the vagina after coitus than in the non-pregnant state. More recently, the availability of estrogen and progesterone has allowed widespread use of another clinical test, withdrawal bleeding. Estrogen and progesterone given to a patient with amenorrhea of short duration ordinarily produces significant withdrawal bleeding if a patient is not pregnant.

Among those tests which have fallen by the wayside are the prostigmene withdrawal bleeding test, the colostrum sensitivity skin test, the venous dilatation of breast veins under infra-red light, and changes in vaginal cytology and basal body temperature. Other tests have used electronic devices to measure changes in electrical potential, electroplating equipment, and many other ingenious methods including the crystallization pattern of cervical mucus. Much of the diagnosis of pregnancy is based on signs and symptoms, for a complete diagnosis must include not only "Is she or is she not," but the anatomic site of the preg-

nancy, its viability, and other factors.

Many tests have been based upon changes in the urine of the woman during pregnancy. The ancient Egyptians observed that urine from a pregnant woman would influence the germination and growth of seeds. In the 13th Century, Magnus discovered that pregnancy urine would float milk. Ryff in the 16th Century found pregnancy urine would cause black spots to form on an iron needle. All these tests have been found wanting.

Throughout the past half century, great effort has been spent in attempting to find a test based on the presence or absence of a substance peculiar to the pregnant state. Such substance, human chorionic gonadotropin (HCG) was detected in body fluids in 1927 by Aschheim.<sup>1</sup> Aschheim and Zondek<sup>2</sup> demonstrated the presence of gonadotropic factors in pregnancy urine which elicited biological responses from target organs of various other species of animals (hemorrhage and luteinization of immature mouse ovaries).

HCG is first secreted by the cytotrophoblast, after the egg has implanted, on approximately the 21-24 days of the human menstrual cycle, or about one week after conception. HCG secretion remains low for another 2-3 weeks. The peak secretion occurs between the seventh and eleventh weeks past the last menstrual period. On the 40th day from the last menstrual period the HCG titer is approximately 5000 IU per 24 hours or 3-4 IU per milliliter of urine. The HCG titers on the 8th and 12th weeks are 50,000 and 100,000 IU/24 hours respectively. Little if any HCG is detected in the blood or urine 72 hours postpartum.

Biologic tests based on the same principle in other animals have reduced the time required to obtain a result to as little as two hours with

\*4301 West Markham, Little Rock, Arkansas 72205.

\*\*401 Center, Box 640, Beebe, Arkansas 72012.

\*\*\*4423 A, Little Rock, Arkansas 72205.

almost as much accuracy; but they too, are poorly suited for use in the physician's office. These include the Friedman test, the male and female frog tests, the rat ovary test, and the rat tail test.

We have had experience with two chemical tests. One, known commercially as Pregna-test, is performed by gently heating Pregna-test paper with acidified urine in a test tube and noticing any change in color. The substance in the urine giving a positive test is not known, but may be an epinephrine-like substance since phenolics, epinephrine and serotonin interfere with the test. (see Results) Our resident staff has studied the diagnosis of pregnancy by the increased leukocyte alkaline phosphatase activity.

In recent years a number of pregnancy tests have been devised based on the immunological response of blood cells or latex particles coated with human chorionic gonadotropin. These tests have been sufficiently accurate to replace the biologic tests in many clinical laboratories and physicians' offices. The major disadvantages of these tests have been the expense of the reagents and the technical difficulty inherent in their use.

#### **Materials and Methods**

Five hundred eighty-four tests were run on urine from 172 patients between the ages of 14 - 49. Subjects were out-patients with amenorrhea or hospital patients awaiting surgery. In each case the patient was followed until a definite diagnosis could be made. If prompt examination of the urine was not possible, the urine was frozen until immediately before the test was performed. All samples were used regardless of specific gravity.

(1) *ASCHHEIM-ZONDEK (AZ)*. Twenty-one day old mice were injected subcutaneously with 0.5 ml. of an acidified urine sample twice daily for two days. The mice were sacrificed on the 5th day and the ovaries examined. The test was read as positive only on finding corpora hemorrhagica or corpora lutea. A fourth mouse served as a control and was not injected. All four mice were approximately the same size and weight.

(2) *PREGNA-TEST*. Exactly 2.5 ml. of acidified urine was added to the Pregna-test paper in a 15 x 125 mm. test tube and gently shaken while heated over a low flame. The color change of the paper was noted and interpreted as positive if the color was a shade of pink to red and as negative if the test was white or a shade of tan or orange.

(3) *ORTHO*. This test used anti (HCG) serum

and latex particles coated with HCG to permit better visualization of the reaction with the naked eye. The urine sample was centrifuged at a high speed for three minutes to clarify it and the supernate was used for testing. Exactly 0.5 ml. of the supernate in a disposable Ortho test tube was mixed and then incubated in a 37° C. water bath. At the end of one hour, 1.0 ml. of antigen was added and again mixed. After an incubation of two hours at 37° C. the solution was centrifuged at 3000 RPM for two minutes. Without shaking the test tube the supernate was compared with the Ortho turbidity standard against a black background for contrast. A turbidity equal or greater than the standard was read as positive for pregnancy while a turbidity less than the standard indicated no pregnancy. This test and the other immunologic tests are based on the principle of agglutination-inhibition. Antiserum to HCG is coupled with the chorionic gonadotropin contained in the urine from a pregnant woman so that with the addition of latex particles sensitized with HCG, no visible reaction occurs; hence the latex particles remain in suspension indicating a positive test for pregnancy. If there is no HCG in the urine the antibodies remain free to bind with the HCG-sensitized latex particles. This causes a visible agglutination with settling of the particles to the bottom of the tube giving a clear supernate; hence a negative test for pregnancy.

(4) *GRAVINDEX*. One drop of antiserum was placed on a clean glass slide with one drop of the urine and mixing with an applicator stick. The slide was rocked gently for 30 seconds. After adding two drops of antigen the mixture was stirred with an applicator stick and spread over an area the size of a half dollar. The slide was rocked slowly and continuously for no longer than two minutes. Agglutination visible to the naked eye against a black background under artificial light was interpreted as a negative test. The absence of agglutination indicated a positive test.

#### **Results**

TABLE I *Pregnant (viable group)*. This group included those women who were pregnant when tested and who later delivered a viable child. Of 97 Ortho tests, 79 were positive and 18 negative for 81.4% correct. The Gravindex had a similar 83.8% correctness out of 37 tests. The highest percentage of correct tests, 91.4%, was found in the AZ test where 96 of 102 tests were positive. The lowest percentage of correct tests was with the

Pregna-test where an accuracy of 76.1% was found for 67 tests.

*Non-pregnant group.* This category included those patients who resumed normal menses subsequent to testing or were found non-pregnant by virtue of tissue diagnosis. Both of the agglutination-inhibition tests gave the highest percentage of correct responses. The Ortho showed 91.5% accuracy with 4 false positive tests out of 47 tests. Of 30 tests the Gravindex had only one false positive for an accuracy of 96.7%. The AZ test had seven false positives in 49 cases for an 85.7% accuracy. As in the pregnancy (viable) category the Pregna-test was least reliable with an accuracy of 75.5% with 53 tests performed.

*Pregnant (non-viable) group.* The non-viable group included those patients whose pregnancy terminated prior to the third trimester in a form of abortion, tubal pregnancy, abdominal pregnancy, hydatidiform mole or a choriocarcinoma. Puerperal patients were also included in this group.

In 25 Ortho tests, there were 17 negative results. Of these, eight showed necrotic tissue on micro-

scopic examination; three were choriocarcinomas; four were postoperative abdominal pregnancies where the placenta was left *insitu*; and two were tubal pregnancies that were subsequently removed. In 32 AZ tests, ten were negative (68.8%). Six cases ended in abortion with necrotic tissue present; two were abdominal pregnancies; and two were ectopics.

In the Pregna-test, which is not based on HCG, there were 17 negatives in 33 tests, 10 of which ended in abortion. Four were choriocarcinomas and three were abdominal pregnancies puerperally.

All five negative Gravindex tests were associated with abortion of some sort. This series of 10 is too small to evaluate.

The fact that the AZ test had more false positives than the Ortho or Gravindex in the pregnant (non-viable) category may be a reflection of its ability to detect smaller quantities of HCG in the urine. To test this hypothesis, a series of tests was instituted using dilutions of human chorionic gonadotropin (Antuitrin "S" by Parke-Davis) from 0.1 IU/ml. to 30.0 IU/ml. in a known negative

(TABLE ONE)

	RESULTS			
	Pregnant (Viable)			
Positive	Ortho 79	AZ 96	Pregna-test 51	Gravindex 31
False Negative	18	6	17	6
Correct	81.4%	94.1%	75%	83.6%
	Pregnant (Non-Viable)			
Positive	Ortho 8	AZ 22	Pregna-test 16	Gravindex 5
False Negative	17	10	17	5
Correct	32%	68.8%	48.5%	50%
	Non-Pregnant			
Negative	Ortho 43	AZ 42	Pregna-test 40	Gravindex 29
False Positive	4	7	13	1
Correct	91.5%	85.7%	75.5%	96.7%
	Accuracy overall excluding Non-Viables			
Correct	Ortho 122	AZ 138	Pregna-test 91	Gravindex 60
Incorrect	22	13	30	7
Accuracy	84.7%	91.4%	75.2%	89.6%

urine. In a total of 98 tests the AZ test became positive at a concentration of 0.3 units/ml., while the Gravindex was positive at 3.0 units/ml. The Ortho was found to respond to 5.0 units/ml. while the Pregna-test remained negative at all dilutions.

The accuracy of the tests in the non-viable category, except for the Pregna-test, was directly proportional to its ability to pick up small concentrations of HCG.

It is evident from the data presented that where the pregnancy is no longer viable or is becoming non-viable, none of the tests give an accurate picture of the actual state of pregnancy. Results from any of the tests must be weighed critically with reference to the patient's clinical history and physical findings.

To further evaluate the sensitivity of these pregnancy tests, serial studies were done on certain patients whose titers of chorionic gonadotropin were expected to be low. These included patients with an abdominal pregnancy from whom the fetus was removed and the placenta left *insitu*, early pregnancy, treated choriocarcinoma and hydatidiform moles, and missed abortions. The Gravindex test was not included in these studies. Generally, the AZ test was more often positive than the Ortho test, but there was no consistent difference between the two. There was however, a variation in the same patient on different days with the same test.

### **Discussion**

The AZ test had the highest overall correct percentage followed by the Gravindex and Ortho. The Pregna-test had the least correct percentage. False positive results were rare with the Ortho and Gravindex test but common in the Pregna-test. A negative test with the Ortho and Gravindex tests was not as meaningful as a positive test.

### *Discussion of Specific Tests*

**ORTHO:** Urines with a specific gravity below 1.015 may have so low a concentration of chorionic gonadotropin that a false negative result may occur. In the viable pregnancy group 10 of the 18 false negative tests were run on a urine of specific gravity less than 1.015. If one were to use only urines with a specific gravity greater than 1.015, the overall accuracy for noncomplicated pregnancies could be raised from 84.7% to about 91.8%. In order to get a urine of high specific gravity, the first morning urine is usually sampled after having the patient take nothing by mouth after midnight. Our samples were generally not the first morning sample. This may well explain our

high false negative results with the Ortho test.

Two false negatives occurred in patients in the third trimester and one occurred 41 days after the patient's last menstrual period. A repeat test on the latter was positive. This probably represented too low a concentration of HCG to permit detection.

Four false positive results were encountered with the ORTHO test. All four patients were receiving exogenous hormone therapy in the form of estrogen or estrogen-progesterone combination. Both the Ortho and the AZ were positive in three of these cases. The exact relationship of the positive tests to exogenous therapy is not known.

Mechanical errors in centrifugation can convert a positive test to a negative test. This may have played a role in the five false negatives for which no other cause was found. Failure to thoroughly mix a thawed sample which had been frozen could be a source of error but this was prevented in this series by shaking the sample prior to testing. Prolonged incubation may cause the precipitation of pituitary gonadotropins to give a false positive test. Taymor in 1963 described immunologic cross reaction between human luteinizing hormones and HCG<sup>3</sup>. Apparently, the high FSH levels noted in postmenopausal women do not affect this test.

Drugs have been reported to give false results. Large doses of salicylates given before the urine sample is collected may give a false positive result. Chlorpromazine was reported to give a positive test by Barnett but this has not been duplicated.<sup>4</sup> Polycystic ovaries were thought by Henry and Little to give a positive test.<sup>5</sup> In two cases of false positive results, there was an association with polycystic ovaries in one. Polycystic ovaries were suspected in the other but were not proven. Corscaden believes that large ovarian cysts act as a reservoir to hold gonadotropins it receives from the circulating blood.<sup>6</sup> Ordinary ovarian cysts in normal pregnancy also contain HCG absorbed from the circulation. HCG has also even been seen in a uterine fibromyoma which had undergone cystic degeneration.<sup>7</sup>

Dysgerminoma of the ovary has been cited as a source of gonadotropins by Pedowitz.<sup>8</sup> Though a rare tumor, this might produce a positive Ortho test if the gonadotropin level were high enough.

Henry and Little found positive tests in three men, two with scrotal abscesses with testicle infarction and the other with a testicular tumor.<sup>5</sup>

The Ortho corporation reports this test to be

97.8% accurate.<sup>9</sup> Goldin confirms a 94.9% accuracy in noncomplicated cases.<sup>10</sup> Other reports have not been so encouraging. This procedure would probably achieve this accuracy if performed at times of peak gonadotropin levels as would ordinarily be done in studies in private practice.

The test is inexpensive, fairly rapid (about 3 hours) and if urines are selected with greater than 1.015 specific gravity, is as accurate by percentage as the AZ test. However, the Ortho test is not so simple to perform in the laboratory as the Gravindex or the Pregna-test due to centrifugation, and incubation, measurements, and longer time required to complete the test. False negative tests are less common than false positive tests.

*AZ:* Of the six false negative results, one test was done 41 days after the last menstrual period. In this patient all tests were negative except the Pregna-test. All tests on the 42nd day were positive. Five false negative AZ tests were unexplainable but in one patient all other tests were also negative. Evaluation was repeated nine days later and again the test remained negative as did the other tests except the Pregna-test which was read as faintly positive.

Of the seven false positives, three patients were on exogenous hormone therapy and the other four were unexplainable.

False negative AZ tests may be caused by refractory animals which will not respond to HCG stimulation. About 3.5% of the mice are said to be refractory. Subjective errors in reading tests may be a cause of either false positive or false negative results. Microscopic examination of mice ovaries is of aid in the interpretation of questionable tests. This was done in one instance and follicles were noted. Failure to perform microscopic examination on all questionable cases may have caused false negative testing.

Overall, the AZ test had the most accurate percentage, but it was time consuming, expensive, troublesome, and impractical for routine testing.

*PREGNA-TEST.* The basis for a positive Pregna-test is unknown, but it could be due to increased histadine levels in the urine. Urinary histadine levels have been used in the past as a pregnancy test.

The Pregna-test was the cheapest, quickest, and simplest test to run but it was also the least accurate. Of the 17 negative tests, six could be explained by a specific gravity below 1.010. Eleven of the false negatives could not be explained.

Of the 14 false positive tests in the non-pregnant category, two patients were on exogenous hormones where all the other tests were positive. One wonders if the clinical diagnosis was correct in these two cases.

Six patients carried the diagnosis of pseudocyesis, were psychoneurotic individuals who insisted they were pregnant, or were patients who expressed a strong desire for children. Three other patients were awaiting hysterectomies; another was a diabetic with osteomyelitis and secondary amenorrhea. These results lead one to speculate that the substance responsible for a positive test may be evaluated in states of anxiety, stress, or pregnancy. Page has shown that histidine excretion in the urine follows the curve of steroid hormones which are increased in both anxiety and stressful states.<sup>11</sup>

The Pregna-test when taken with physical findings may be of value in differentiating moles and choriocarcinomas from normal pregnancy. The Pregna-test is usually negative in these pathological conditions because it is not based on HCG. This is not invariable however, since there is suggestion that stressful situations may cause positive tests. The manufacturer of Pregna-test reports that phenols, adrenalin, and serotonin are drugs which may give false results. Failure to acidify the urine prior to the performance of the test as well as errors in reading the color change are additional sources of error.

*GRAVINDEX.* Though our number was small the Gravindex test showed promise of high accuracy for the noncomplicated cases. False positive results were rare and occurred only once in 30 tests. Of six false negatives, one test was 31 days and another 41 days after the last menstrual period. Repeat tests were positive in both cases.

False positives have been reported after large doses of aspirin and related compounds, but are not so much a problem as with the Ortho tube test. False positives may also be caused by rocking the slide too rapidly, thus preventing agglutination. False results could occur from failure to bring all reagents to room temperature prior to running of tests. It has also been suggested by Hutcherson that a very concentrated urine with marked proteinuria and infection may produce a false positive result.<sup>21</sup> Goldin reported a false positive result in a patient receiving large doses of progesterone.<sup>10</sup> However, Noto and Miale attempted to produce a positive test in men with high doses

of progesterone but were not successful.<sup>13</sup>

### Summary

Statistically, no significant differences were noted between the AZ, Gravindex, and Ortho tube tests for pregnancy. Our results have led us to confirm the validity of the immunologic tests as superior to others in office practice. Although our experience with the Gravindex slide test is limited we prefer it for several reasons: (1) It is the simplest of all the immunologic tests and least subject to error in the hands of personnel in the physician's office (2) It is highly accurate, especially six to seven weeks after the last menstrual period (3) The slide test is rapid. The urine specimen can be processed while the patient is being prepared for examination or while being examined, and the result will be immediately available (4) The materials are simple, stable and inexpensive—little room and no special equipment is needed, (5) Random urine specimens may be used and specific gravity is of little importance.

### Note

Since the original paper was prepared, we have run a large number of pregnancy tests (Gravindex and Wampole-UCG). We believe the present enthusiasm for the immunologic tests is justified despite our knowing that many other tests have been enthusiastically started and later abandoned. These tests are based on well founded principles, and much refinement has taken place during the past several years.

### Bibliography

- McCarthy, C., et al.: "Chorionic Gonadotropin Excretion in Normal and Abnormal Pregnancy". *J. Obstet. and Gynec. British Commonwealth*, 71, 1:86 (1961).
- Aschlheim, S. and Zondek, B., Schwanger-Schäfts Diagnose und den Harn, (dmch Hormonmachevis). *Klin. Wochenschr* 7:8, 128.
- Taymor, M. L., et al.: Immunologic Cross-Reaction between Luteinizing Hormone and Human Chorionic Gonadotropin. *Fertile. & Steril.*, 14:603-609, 1963.
- Barnett, R. N.: Comparison of an Immunologic and a Toad Test for Pregnancy. *Tech. Bull. Regist M. Technologist*, 33:54, 1963.
- Henry, J. B. and Little, W. A.: Immunological Test for Pregnancy. *J.A.M.A.*, 182:230-233, 1962.
- Corsaden, J. A.: *Gynecologic Cancer*. The Williams and Wilkins Co., Baltimore, 1956.
- Watts, R. M. and Adair, F. L.: Some Observations on the Hormonal Content of Ovarian Cysts Associated with Pregnancy. *Am. J. Obst. & Gynec.*, 47:593-606, 1944.
- Pedowitz, P. and Grayzel, D. M.: Dysgerminoma of the Ovary: An Analysis of 17 Cases with Special Reference to Histogenesis and Therapy. *Am. J. Obst. & Gynec.*, 61:1243-1251, 1951.
- Seminar Report. Pregnancy Test. Raritan, N. J. Ortho Research Foundation. No. 568, p.1. Not dated.
- Goldin, M.: The Use of Latex Particles Sensitized with Human Chorionic Gonadotropin in a Serologic Test for Pregnancy. *Am. J. Clin. Path.*, 38:335-338, 1962.
- Page, E. W.: The Excretion Rates of Histidine in Pregnant and Non-Pregnant Women. *West J. Surgery*, 51:482, 1943.
- Hutcherson, et al.: A Simple Slide Pregnancy Test with the Use of an Immunological Technique. *Am. J. Obst. & Gynec.*, 89:70-76, 1964.
- Noto, T. A. and Miale, J. B.: New Immunologic Test for Pregnancy. *Am. J. Clin. Path.*, 41:273-278, 1964.



### Tolerance of Mice to Ultrasonic Aerosol Exposure

J. H. Modell et al (PO Box 875, Biscayne Annex, Miami, Fla)

*Amer J Dis Child* 115:322-327 (March) 1968

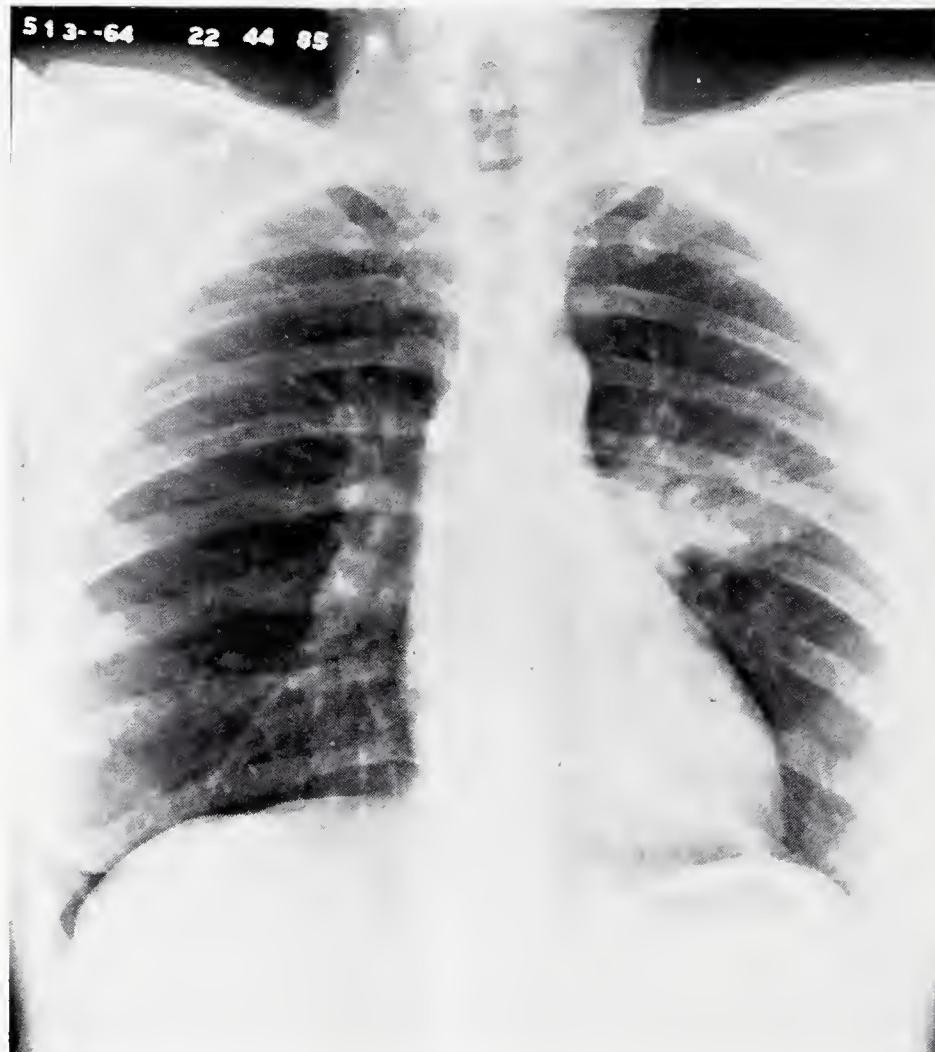
Studies of mortality, pressure volume curves, and lung stability index (LSI) were conducted in mice after chronic exposure to ultrasonic aerosols. Mortality after exposure to aerosols from physiological saline was statistically greater than in animals exposed to distilled-water aerosol or aerosol generated from half-normal saline solution. Although mortality rates are comparable

for the distilled-water group and half-normal-saline group for six days of exposure, the distilled-water group showed a significantly greater mortality rate after the seventh day. Individual pressure volume curves measured at intervals during 120-hour exposure to normal saline aerosol and distilled-water aerosol failed to show any significant changes. However, when the LSI was calculated from the deflation pressure volume curves, the slope of curves drawn from the mean LSI values suggested a decreasing index with increased duration of exposure.

# WHAT IS YOUR DIAGNOSIS?

Prepared by the  
Department of Radiology, University of Arkansas  
School of Medicine, Little Rock

See Answer on Page 491



**HISTORY:** This 38-year-old woman had an 18-month history of weight loss, fever, night sweats and cough productive of foul sputum. One month prior to admission she had an episode of hemoptysis.

## ELECTROCARDIOGRAM

## OF THE MONTH

AGE: 72 SEX: Female BUILD: Medium BLOOD PRESSURE: 150/80

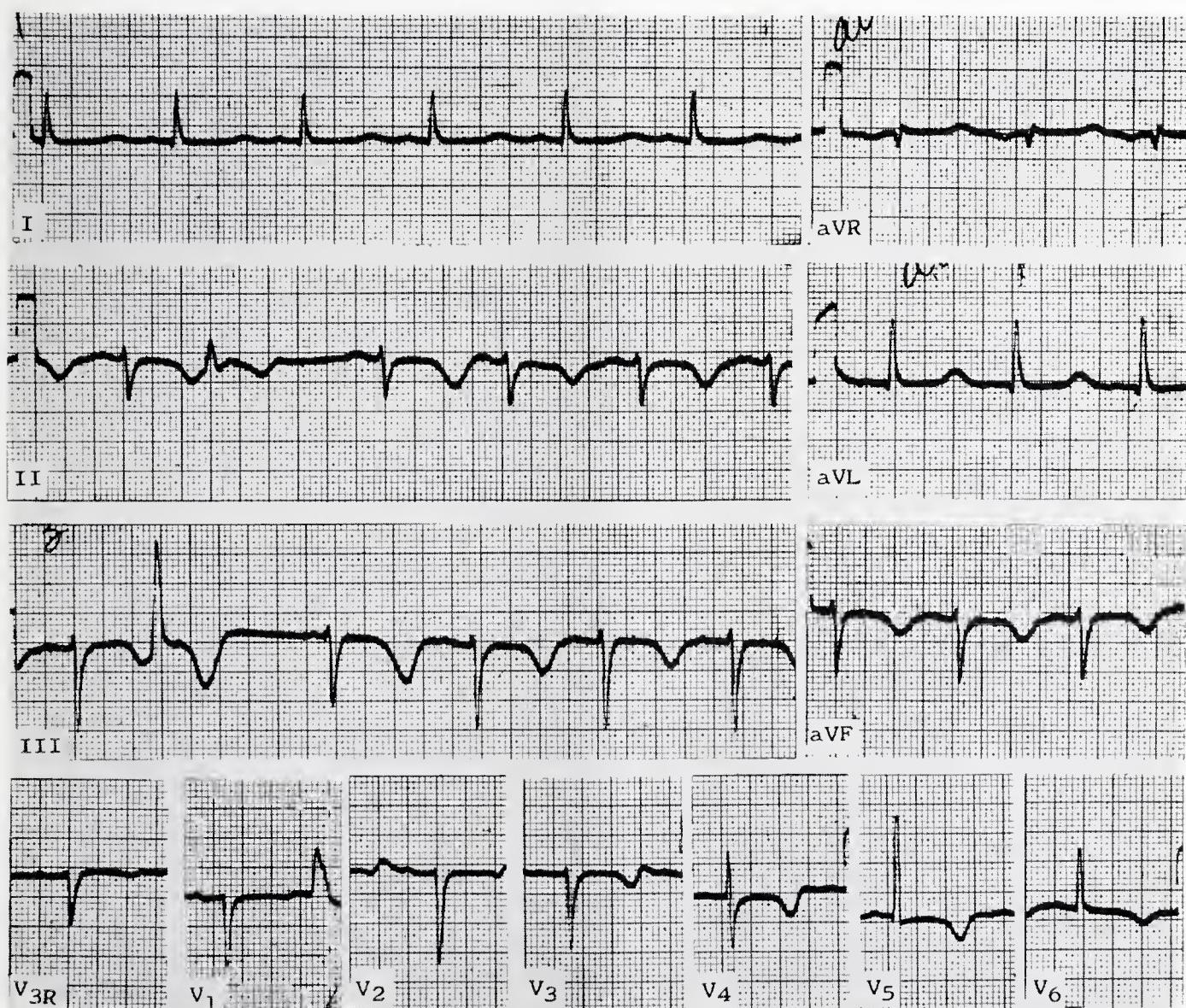
CARDIAC DIAGNOSIS: Undetermined

OTHER DIAGNOSES: Hypoparathyroidism, suspected, not proven.

MEDICATION: None

HISTORY: Thyroid surgery in 1959. Recent convulsive episodes.

See Answer on Page 491



The Department of Medicine, University of Arkansas Medical Center  
James S. Taylor, M.D., Professor of Medicine



## Preschool Vision Screening

There is abundant clinical evidence to justify the need for vision screening of preschool children. Refractive errors in this age group are not rare. Amblyopia ex anopsia occurs frequently enough to encourage the detection of visual difficulties before age six, so that corrective action can be taken before permanent impairment of vision occurs. There is, however, surprisingly little available epidemiologic data on the frequency of various types of visual defects in this age group. It is known that all the schools in Arkansas have regularly scheduled programs of vision screening. In these school screening programs we have detected many children who have reached the age where permanent vision impairment has occurred. If these children had been screened before school age, there is the possibility or at least a chance that this impairment could have been detected and corrected.

The condition found in about 3 out of every 100 preschoolers, unless preventive measures have been started earlier, is amblyopia ex anopsia or suppression amblyopia. Translated literally from the Greek, this term means "dull eye" or more commonly called "lazy eye". It may be due to an organic defect such as cloudy cornea, cataract or malfunctioning retina or optic nerve. Most amblyopic eyes, however, are normal anatomically but functionally dull due to disuse.

When two eyes for any reason do not cooperate adequately, usually a clear picture is not obtained in one. When this happens, the child often uses only the clear vision from one eye and ignores (suppresses) the blurred vision from the other. As a result, central vision, and the ability to see small objects, does not develop as it should in the suppressed eye. The longer this goes on the less chance there is for the development of normal vision. It is this amblyopia that causes eye specialists the disappointing experience of having school children referred to them with the condi-

tion beyond repair, as it usually becomes fixed at about the age a child enters school.

Suppression Amblyopia, usually a unilateral problem, is generally caused by one of two clinical conditions: (1) eyes having unequal optical qualities and (2) eyes being improperly aligned. The former condition is known as Anisometropia and the latter is Strabismus. For example, in anisometropia one eye may be normal, the other hyperopic. If the eye receiving the sharp vision is used exclusively it develops adequate vision. Conversely, the eye which receives the blurred image has no incentive to see and is amblyopic from disuse.

When the eyes are improperly aligned, or crossed, only one eye at a time can be used for seeing or double vision results. The child learns to ignore the picture seen by the crossing eye. Strabismus accounts for about half the cases of suppression amblyopia but less than one half of all strabismic children develop an amblyopic eye.

The Maternal and Child Health Division of the Arkansas State Health Department under the direction of Dr. Rex Ramsey has taken the lead in developing and establishing a preschool vision screening program.

Preschool vision screening programs to be effective and successful must meet certain criteria. The screening test must be simple enough to be reliably carried out by non-professional personnel. It must be based on some sort of objective criteria, as free as possible from personal evaluations and void of judgments. Screening procedures must be carried out relatively quickly. It should take no more than five to ten minutes to screen a preschool child, depending upon the age, level of development, and mental alertness of the child. It is also influenced by the communication between the screener and the child. Screening procedures should require a high level of validity. If there is a margin for error it should be in favor of

the false negative rather than the false positive. It is far more serious for abnormalities to be missed by the screening test than for normals to be over-referred.

With this criteria as a guide the Maternal and Child Health Division examined several different preschool vision screening techniques. The technique selected, with the consultation of ophthalmologist interested in our program, is the visual acuity test using a group of Es on picture cards at 20/40 and the muscle balance at distance and near. The age of the children to be screened are the four and five year olds. Some three year olds can be screened but for the most part these children are not mature enough to follow directions. Some children who have just reached age six and are not in school should be screened.

The Maternal and Child Health Division of the State Health Department has purchased the equipment necessary for conducting the preschool vision screening programs. This equipment is loaned to volunteer groups who are interested in conducting the program. The screeners are trained in the use of the equipment and the screening techniques by the special vision consultants of the Maternal and Child Health Division. The children who have difficulty with the first screening test are retested and referred if still having difficulty by the consultants. These referrals are made by means of a letter to the parents suggesting that they take the child to an eye specialist of their choice for a complete vision examination.

The importance of followup of the children referred must be strongly emphasized. The follow-

up requires the cooperation of the parents and the eye specialist doing the examination. The follow-up is not only necessary for the child to receive the prescribed correction, but also that the screening techniques may be evaluated in terms of validity.

A screening program to discover vision loss early and refer children for correction to prevent them from starting to school with the handicap of poor vision, or facing the future with only one usable eye will require the cooperation and services of all disciplines involved with preschool children. Any one who desires to conduct a screening program or who wishes more information may contact the Maternal and Child Health Division of the Arkansas Health Department.

## RESOLUTIONS



WHEREAS, the passing from this life of Dr. Horace R. Murphy, an honored and valued member of the community and of the Pulaski County Medical Society, is noted with sincere sorrow; and

WHEREAS, Dr. Murphy had attained the highest degree of respect among his fellow physicians for his devotion to the practice of his specialty; and

WHEREAS, his record of service to the profession and to his patients is one which is most noteworthy;

### BE IT THEREFORE RESOLVED:

THAT, the Members of the Pulaski County Medical Society pause with respect to honor the memory of Dr. Murphy; and  
THAT, an expression of our heartfelt sympathy be extended to his family; and

THAT, a copy of this resolution be made a part of the permanent records of this Society; that a copy of this resolution be published in the Journal of the Arkansas Medical Society; and that a copy of this resolution be forwarded to the family of Dr. Murphy.

By Action of the Memorials Committee  
T. Duel Brown, M. D., Chairman  
John McCollough Smith, M.D.  
Robert Watson, M.D.



Counties with preschool vision screening programs



## EDITORIAL

# Antibiotics

Alfred Kahn, Jr., M.D.

The mode of action of antibiotics is gradually being unravelled. Our knowledge of this important field has been summarized in a symposium in *The American Journal of Medicine* (November, 1965). This is one of the best collections of information in this fast changing field. This field may be divided arbitrarily as Austrian points out in the foreword into those antibiotics which interfere with the functioning of bacteria cell membranes or those which interfere with the functioning of bacteria cell membranes or those which interfere with the synthesis of DNA, RNA, or protein in the bacterial cell.

In reviewing the chemistry of new antibiotics, Abraham suggests that antibiotics can be classified by the organism which produces the substance, by chemical structure, or by biological activity, and his review uses the third classification. The basic penicillin molecule is presented and the various side chains which alter activity are graphically depicted. Related to penicillin are the cephalosporin family. Of a different chemical family are the antibacterial polypeptides as Bacitracin and Polymyxin. Separate chemical entities from the above and each other are the Tetracyclines, Erthromycin group, Kanamycins, and Lincomycin. The above substances are all antibacterial. The currently used antifungal antibiotics are Griseofulvin, Nystatin, and Amphotericin. The cytotoxic antibiotics are Mitomycin, Puromycin, and Actinomycins.

Strominger and Tipper have reviewed how certain antibacterial agents produce their effects by injuring or altering the function of bacterial cell walls. Penicillin G is cited as an example of the problems in understanding the mechanisms of antibacterial action; it kills gram positive bacteria and to a much lesser extent gram negative bac-

teria; it kills growing, not resting cells; its actions result in the formation of filamentous bacteria forms. Some understanding has resulted from the study of the cell walls of gram positive bacteria which had rather simple walls in comparison to complex walls of gram negative bacteria. Penicillin was found to be a selective inhibitor of bacterial cell wall synthesis; it results in a cell form which is unstable and bursts; any substance, even another antibiotic, which prevents the bacterial protoplast from assuming an unstable form after cell wall injury by penicillin, may inhibit the lethal action of penicillin on that bacteria. Proof of penicillin's ability to inhibit cell wall synthesis is furnished by the accumulation of uridine nucleotides; the precursor of bacterial cell wall, in penicillin treated bacteria. The formation of the cell wall is a step wise reaction involving nine different enzymes, any one of which could be blocked by appropriate substances. The cell wall in the case of *staphylococcus aureus* is a tetrapeptide and there are cross bridges between adjacent molecules; other substances may be present in the wall.

J. H. Goldberg is the author of the article on drugs and antibiotics which exert their effect by affecting nucleic acid and protein synthesis. The problem with substances in this group is that some do not selectively injure the bacteria. Since DNA and RNA are synthesized differently, and since both are synthesized differently than cellular protein, the author divided his discussion into three separate categories. The actinomycins inhibit RNA formation; there are different actinomycins with different biological activity spectrums. Actinomycin binds itself to DNA and this accounts for its biological activity; it requires guanine in a helical configuration before this

coupling can occur; the author supports this theory with appropriate graphs demonstrating the spatial relationships involved. The attachment of the actinomycin to the DNA molecule interferes in turn with the synthesis of RNA. Substances which inhibit RNA are Chromomycin, Methramycin, Olivomycin, and Daunomycin. Pheomycin, Metomycin, Porsfiromycin, Streptonigran and Novobicin interfere with DNA synthesis. RNA and DNA synthesis is interferred with by Echinomycin, Codycepin, and Tubercidin. Protein synthesis is upset by Puromycin, Cycloheximide, Tetracyclines, Erythromycin, Chloramphenicol, Streptomycin, and others.

Petersdorf and Sherris, as a part of this symposium, have reviewed the "Methods and Significance of In Vitro Testing of Bacterial Sensitivity to Drugs." As they point out for therapy to succeed the bacteria producing the infection must be susceptible to the drug employed in the treatment. In order for an in vitro test to succeed the testing conditions should be standardized and controlled; this includes incubation temperatures, pH, size of the inoculum, etc. The end point can be determined as the minimal inhibitory concentration or the minimal bacteriocidal concentration. Sensitivity ordinarily means an inhibitory amount of drug at the site of infection. Minimum inhibition blood levels of the drug are often computed and this means that the bacteria is inhibited at the site of infection when a certain amount of drug is present in the blood stream per unit of volume. Sometimes sensitivity is defined by comparing the organism to a standard strain. A third way of

defining sensitivity is "based on the distribution of susceptibilities within individual species of bacteria." Petersdorf and Sherris have summarized the practical methods of testing bacterial sensitivity. Dilution on either liquid or solid media can be used as the unknown against a standard strain to avoid errors due to drug deterioration. The diffusion method usually consists of having bacteria exposed for growth on a filter paper containing various concentrations of the drug being tested; this may be varied by using discs which have zones of different drugs. A so-called single disc method of relating the minimal inhibitory dose to the size of the zone of inhibition is recommended as a good technique using either of two well worked out methods. Testing for sensitivity to combinations of antibiotics can be accomplished by putting various concentrations of drugs in a broth and then inoculating the tubes with a known concentration of the organism; this is followed by subculturing and then performing bacterial count. Another technique employs filter paper impregnated with the test drugs for routine sensitivity testing. Petersdorf and Sherris felt that the Agar dilution test is best for large laboratories but the single disc method will give good results if properly handled and interpreted. Despite skill in the performance of sensitivity tests, unfortunately the vitro testing of bacterial sensitivity may not provide completely reliable of in vivo results with certain bacteria.

Other topics are discussed in this uniquely good symposium including Bacterial Resistance to Antimicrobial Drugs, Present Status of Combined Antibiotic Therapy, etc.



### **Occlusion of Uterine Tube Treated by Salpingostomy and Local Instillation of Lysofibrin**

T. Wisborg (Diakonissestiftelsen, Gynaekologisk Afdeling, Copenhagen)

*Nord Med* 79:179-181 (Feb 8) 1968

Fourteen patients with obstruction of the uterine end of the tube and severely damaged tubal epithelium were treated by salpingostomy followed by continuous instillation of a fibrinolytic enzyme preparation (Lysofibrin), 0.5 units

per milliliter of solution, through the cervical canal of the uterus on the first seven postoperative days. Hysterosalpingography two to three months after the treatment showed free passage through the uterine tube in seven patients, none of whom had become pregnant within the first two years. In connection with the treatment, five patients showed signs of severe local peritoneal reaction; an abscess in Douglas' pouch developed in one patient. Results were thus not encouraging.

## MEDICINE IN THE



### **Medical Schools in the United States Face Serious Financial Crisis**

NEW YORK, N. Y.—In a 29-page report, the Committee on Medical Education, an ad hoc committee of medical school deans and other educators from medical schools throughout the United States, observed that the medical schools of the nation face a serious financial crisis that imperils their educational role and jeopardizes the success of many of the new health programs enacted by recent legislation. The Committee stated bluntly that the only possible solution to the financial crisis affecting all medical schools, whether they are large or small, old or new, private or state-supported, was substantial, direct support for medical education by the federal government.

The report noted that although research support, primarily by the National Institutes of Health of the U. S. Public Health Service, "has been decisive and realistic, the educational functions of the schools have been allowed to languish for lack of funds. Medical schools have been unable to expand their enrollment of students to meet the serious national shortage of physicians. Primarily because of meager support for medical education, they have been unable to modify their curricula to meet present needs arising out of the exponential growth of new knowledge and the changing role of the physicians."

The Committee's report stated that "there are no financial resources to enable the schools to undertake essential new roles. This is of particular concern at the present time because the medical schools are being called upon by government and by society to play a major part in improving the delivery of health services, especially to the urban and rural poor, and in conducting research and demonstrations on how medical care can be improved for all citizens."

The report rejected the idea that makeshift redirection of existing federal support through existing legislation could alleviate the financial plight of the schools. The basic problem of adequate funds "cannot be solved and might well be aggravated by such an expedient," the Committee

noted. "The magnitude of this problem, which affects medical schools throughout the nation, clearly indicates that the solution demands bold and decisive action. Nothing less than substantial direct support for medical education will suffice. Although state governments must rightly assume a share of this increased responsibility, the major burden properly rests upon the federal government."

Although the Committee said that "this report does not and should not extend to a detailed definition of what new legislation might be proposed to meet the identified needs of medical education," the report did list a number of objectives that should be met. These included the strengthening of the base of the medical schools' educational mission, fostering the growth of all functions in developing institutions, establishment of new institutions by support for construction and for recruitment of personnel, expansion of enrollment in existing schools, more faculty to meet new social responsibilities, and support for research.

A major feature of the report was the identification of major common goals of the nation's medical schools by deans and other educators from many of the most prominent and prestigious medical schools in the United States. Ten common goals were unanimously agreed upon by the Committee. These included the education of more physicians, educational experimentation and curriculum reform, continuing education of the practicing physicians, the preparation of more faculty, the reduction in the cost of medical education to the student and thus eliminating the financial barrier to the entry of students from low-income families, leadership and participation by medical schools in federal, state and local health-service programs, more research in methods of health-care delivery, research on development and utilization of new categories of health-allied personnel, more biomedical research, and active participation in international medical affairs.

The report is a direct outgrowth of conferences

held in Woods Hole, Massachusetts, and in New York City during the summer of 1967. Prior to the summer conferences, a series of meetings on the problems of medical education had been held over a two-year period at the Massachusetts Institute of Technology; at Fort Lauderdale, Florida; and at Swampscott, Massachusetts. The various meetings and the report itself were financed by grants from the Carnegie Corporation of New York and the Commonwealth Fund.

#### **Dr. Smith Gets Award**

LITTLE ROCK—Dr. W. Grady Smith, assistant professor of biochemistry, is the recipient of the Lederle Medical Faculty Award in recognition of his work at the University of Arkansas Medical Center.

The three-year \$12,051 salary support award is one of about 18 granted by Lederle Laboratories this year to scientists throughout the nation who have demonstrated not only ability or promise in research, but also in medical teaching.

Dr. Smith's research interests, centered primarily in bacterial structure and metabolism, has attracted grants amounting to some \$124,704 from the National Institutes of Health and the National Science Foundation. In addition, Dr. Smith and two UAMC pediatricians have a \$138,537

NIH grant for a three-year study on the role of manganese in the metabolism of a substance present in connective tissue.

#### **The Month in Washington**

WASHINGTON, D. C.—The American Medical Association and the Association of American Medical Colleges announced a joint policy statement calling for a substantial increase in the number of medical students.

Dr. Milford O. Rouse, president of the AMA and Dr. John Parks, president of the AAMC, reviewed the joint statement at a news conference in Washington.

The statement "emphasized the urgent and critical need for more physicians if national expectations for health services are to be realized". The statement said:

"National policy which would best meet this need, and would be consistent with the American ideal of equal educational opportunity for all, would provide such educational resources that every young person interested in and qualified for entry to the study of medicine would have this opportunity. Both Associations endorsed the position that all medical schools should now accept as a goal the expansion of their collective enrollments to a level that permits all qualified appli-

#### **ANSWER—What's Your Diagnosis?**

##### **DIAGNOSIS:**

Lipoid pneumonia.

##### **X-RAY FINDINGS:**

There is a soft tissue density overlying the left hilar structures. On lateral views this apparent mass lies far posterior. The lesion was surgically excised and found to represent a chronic inflammatory process secondary to aspirated oily material. No history could be elicited as to when the aspiration occurred or what specific substance was involved.

#### **ANSWER—Electrocardiogram of the Month**

RATE: 69 RHYTHM: Sinus with occasional premature ventricular contractions.

P-R: 0.20 sec. QRS: .09 sec. Q-T: .62 sec.

##### **SIGNIFICANT ABNORMALITIES:**

Occasional premature ventricular contractions. Prolonged Q-T interval. Abnormal T inversions, non-specific type.

##### **INTERPRETATION:** Abnormal

Tracing diagnostic of hypocalcemia. (Chemistries reveal serum calcium 5.3)

cants to be admitted. As a nation, we should address the task of realizing this policy goal with a sense of great urgency.

"In their endorsement of and call for broadening educational opportunity for the study of medicine, both Associations stressed that the length of time necessary to realize such a goal does not minimize the need to respond to today's critical shortage of physician manpower. In order to enable the nation's medical schools both to meet today's crisis and to attain the longer-range goal of unrestricted educational opportunity, those responsible for allocation of resources must recognize the magnitude of these tasks."

The two associations said both immediate and long-range steps should be taken.

The immediate steps are:

1. To increase the enrollment of existing medical schools.
2. To foster curricular innovations and other changes in the educational programs which could shorten the time required for a medical education and minimize the costs.
3. To meet the need for innovation in educational programs and to encourage diversity in the character and objectives of medical schools. The development of schools of quality where a primary mission is the preparation of able physicians for clinical practice as economically and rapidly as possible is to be encouraged . . .

"A longer-range approach to the need for physicians is the development of new medical schools," the statement said. "This approach will not solve our immediate, urgent need for more physicians but it is essential for meeting the national needs of 1980 and beyond."

The two associations said the longer-range program would require adequate financial support from governmental and various private sources for:

1. Construction of facilities to expand enrollment of existing schools and to create new schools.
2. Support of the operational costs of medical schools.
3. Stimulation and incentive for educational innovation and improvement.

"To implement these measures will further require that each medical school and its university reexamine its objectives, its educational program, and its resources to determine how it can contribute most effectively to the national need for more physicians and what financial help it will

need to make this contribution," the statement said. "Also required is understanding by the public, the private foundations, industry, local and state governments, and the national Congress —groups which must provide the financial support which is necessary.

"Initiative for development of new schools and expansion of the established institutions should be locally determined. Only the governing bodies of schools with ongoing programs in medical education can decide to expand such programs. Institutions wishing to organize new medical schools must assume the responsibility for marshalling the necessary support. Both associations are prepared to lend any assistance they can to such efforts."

\* \* \* \*

In a health message to Congress, President Johnson proposed control of prices of drugs bought for government programs and asked for authority for the Food and Drug Administration to publish a drug compendium financed by drug manufacturers. He also asked for more money for health manpower and the maternity and child health programs.

With an objective of lowering costs, he also asked for authority for the Health, Education and Welfare Department to establish new formulas for reimbursement of hospitals and physicians under medicare, medicaid and maternal and child health programs. The Social Security Administration immediately announced that it would begin "an experimental program to find methods of reimbursing hospitals and doctors that will have built-in incentives to efficiency and economy."

Participation in such experiments would be entirely voluntary, the SSA said. And Congress would have to approve the necessary legislation before new methods of reimbursement could be put in effect on a mandatory basis.

Under medicare, a physician now is reimbursed on the basis of his usual and customary fee if it is considered reasonable.

HEW said two methods of reimbursement involving physicians that might be tried are:

- Group practice prepayment plans which offer comprehensive health services to their members could be reimbursed on a set per capita rate for the ensuing period.
- For physicians' services, experimental bases of payment might be a single fee related to total illness services rather than individual fees for

each individual visit and individual service, agreed-upon fees held stable for specified periods, fees related to physician-time, or retainer or per capita payments per year for services of a specified kind.

Commenting on Mr. Johnson's health message, Dr. Rouse said:

"There is great need for expanded health care service in the United States. Meeting this need requires devoting attention to all the elements involved in the supply of resources and manpower, the distribution of health care, and costs.

"The AMA supports private and governmental programs that help those who need help. Health care for all the people should be expanded in an orderly way so resources and needs are increased together and at comparable rates of growth.

"Government can and should support the construction and renovation of hospitals and extended care facilities, and together with the states and private sources, should promote a rapid increase in medical manpower.

"As for drug prices, we believe that every patient should be able to buy high quality prescription drugs at the lowest possible price. The way to accomplish this is to promote more effective price competition at the retail level, which will result in lower prescription drug prices for everyone. This should be the thrust of government programs—not price fixing for one group. Everyone should be encouraged to be more price conscious in buying prescription drugs. The physician should include both medical and price considerations in writing prescriptions and the patient should patronize that pharmacy that can furnish dependable service and the prescribed product at the lowest possible price . . . .

"The President's message contains little essentially new. It concentrates again on pouring additional millions of dollars into a health care system that is already facing requirements well beyond what it can now meet.

"Government expenditures for health care should be moderated during this period of acute shortage to control rapidly rising cost. Government can be most helpful by controlling inflation and by providing tax deductions and credits for people purchasing health insurance. . . .

"The physicians of this country will welcome a genuine partnership in health, where the Federal government will sincerely and continually seek the advice and active collaboration of those

whose special services lie in medical education and the planning and provision of superior quality medical care for all citizens."

The Board of Medicine of the National Academy of Sciences stated that the transplantation of human hearts still is in the experimental stage and proposed three guidelines for the procedure.

The Board said human cardiac transplantation should only be carried out in institutions in which these three criteria can be met:

1. The transplant teams should be highly skilled and have had extensive laboratory experience.
2. The work should be carefully planned, and the results should be rapidly communicated to others in the field.
3. Both the teams and the patients should be protected by "rigid safeguards."

\* \* \* \*

A check is being made to determine how many alien physicians, dentists and "allied specialists" are now subject to draft laws. A new law for the first time makes aliens in the medical and dental professions subject to draft up to age of 35.

\* \* \* \*

President Johnson asked Congress for \$571.7 million more for medicaid for the 1968 fiscal year ending July 1, 1968.

The administration said the initial appropriation proved inadequate because of a complete lack of data and experience as to costs of such a program and a larger increase than expected in costs of hospital and other medical care.

#### **Foreign Medical Graduates in U. S. Training Programs**

As of September 1, 1966, there were 14,842 foreign medical graduates enrolled in training programs in U. S. hospitals. Graduates of medical schools located in countries other than the United States or Canada are classified as foreign medical graduates irrespective of their national origin or current citizenship. Recently obtained data indicate that only 7 per cent of the foreign medical graduates are native born U. S. citizens and that an additional 3 per cent were naturalized U. S. citizens.

The largest group (64 per cent) of the foreign medical graduates in U. S. training programs were in residencies while 19 per cent were in internships and 17 per cent were in other clinical training programs. The 9,483 residency positions filled by foreign medical graduates in 1966 constituted

a new record of 29.8 per cent of the total U. S. residencies. In the same year the 2,793 foreign-trained interns accounted for a near record 26.9 per cent of the interns in U. S. hospitals. Foreign medical graduates in the past 5 years have provided an annual average of 2,442 interns, 8,170 residents, and 1,932 other clinical fellows to the training programs of the U. S. hospitals. Table 1 presents the number and percentage of U. S.

internships and residencies filled by foreign medical graduates in each of the years from 1950 to 1966.

Approved graduate training programs are conducted by 1,512 U. S. hospitals of which 40 per cent have some degree of affiliation with U. S. medical schools. The distribution of foreign medical graduates in the hospitals with affiliations are contrasted with nonaffiliated hospitals in

TABLE 1  
NUMBER AND PERCENTAGE OF TOTAL INTERNSHIPS AND RESIDENCIES IN THE  
U. S. FILLED BY FOREIGN MEDICAL GRADUATES 1950-66

Year	<i>Internships Filled</i>			<i>Residencies Filled</i>		
	Total	By Foreign-Trained M.D.s (Number)	By Foreign-Trained M.D.s (Percentage)	Total	By Foreign-Trained M.D.s (Number)	By Foreign-Trained M.D.s (Percentage)
1950	7,030	722	10.3	14,495	1,350	9.3
1951	7,866	1,116	14.2	15,851	2,233	14.1
1952	7,645	1,353	17.7	16,867	3,035	18.0
1953	8,275	1,787	21.6	18,619	3,802	20.4
1954	9,066	1,761	19.4	20,494	3,275	16.0
1955	9,603	1,859	19.4	21,425	4,174	19.5
1956	9,893	1,988	20.1	23,012	4,753	20.6
1957	10,198	2,079	20.4	24,976	5,543	22.2
1958	10,352	2,315	22.4	26,758	6,042	22.6
1959	10,253	2,545	24.8	27,590	6,912	25.0
1960*	9,115	1,753	19.2	28,447	8,182	28.8
1961	8,173	1,273	15.6	29,637	7,723	26.0
1962	8,805	1,669	19.0	29,239	7,062	24.2
1963	9,636	2,566	26.6	29,485	7,052	23.9
1964	10,097	2,821	27.9	30,797	8,140	26.4
1965	9,670	2,361	24.4	31,687	9,113	28.8
1966	10,366	2,793	26.9	31,792	9,483	29.8
Total	156,043	32,761	21.0	421,171	97,874	23.2

Source: Education Number of the Journal of the American Medical Association, Vol. 202, No. 8, November 20, 1967.

\*Effective December 31, 1960, all foreign-trained physicians applying for internships and residencies in U. S. hospitals were required to have certification by the Educational Council for Foreign Medical Graduates.

TABLE 2  
NUMBER AND PERCENTAGE OF FOREIGN MEDICAL GRADUATES SERVING  
IN INTERNSHIP AND RESIDENCY PROGRAMS OF AFFILIATED AND  
NONAFFILIATED HOSPITALS IN 1966

Type of Hospital	<i>Internships Filled</i>			<i>Residencies Filled</i>				
	By U.S. and Canadian-Trained M.D.s	By Foreign-Trained M.D.s	Total	Foreign-Trained as % of Total	By U.S. and Canadian-Trained M.D.s	By Foreign-Trained M.D.s	Total	Foreign-Trained as % of Total
Affiliated	5,446	847	6,293	13.5	16,103	4,911	21,014	23.4
Nonaffiliated	2,127	1,946	4,073	47.8	6,206	4,572	10,778	42.4
Total	7,573	2,793	10,366	26.9	22,309	9,483	31,792	29.8

Source: Education Number of the Journal of the American Medical Association, Vol. 202, No. 8, November 20, 1967.

Table 2, which compares the number of U. S. or Canadian-trained M.D.s with the number of foreign-trained M.D.s serving as interns and residents in 1966-67. Both in terms of interns and residents

the affiliated hospitals are utilizing a lesser proportion of the total number of foreign-trained M.D.s than are the nonaffiliated hospitals.

The 20 countries whose medical school gradu-

ates constitute the major share (83 per cent) of the foreign medical graduates in U. S. training programs are listed in Table 3 which indicates the number and percentage of all foreign medical graduates that were trained in each country. The remaining 17 per cent of foreign medical graduates, not included in Table 3, were trained in 56 countries in numbers ranging from the single graduates of medical schools in Estonia and Lithuania to the 125 graduates of medical schools in both Turkey and Belgium. The data in Table 3 includes in addition to the foreign-trained M.D.s in internships and residencies those that are in all other clinical training programs.

TABLE 3

THE 20 COUNTRIES EDUCATING THE GREATEST NUMBER OF FOREIGN MEDICAL GRADUATES SERVING IN U. S. TRAINING PROGRAMS

Country and Order of Rank	Total Number of Trainees	Percentage of Total Foreign Graduates in U. S. Graduate Training Programs
1. Philippines	3,517	25.7
2. India	1,468	10.7
3. Korea	805	5.9
4. Iran	612	4.5
5. Thailand	531	3.9
6. Cuba	462	3.4
7. Argentina	446	3.2
8. Mexico	385	2.8
9. Spain	371	2.7
10. Germany	360	2.6
11. Colombia	347	2.5
12. Italy	345	2.5
13. Formosa	329	2.4
14. Switzerland	297	2.2
15. Pakistan	288	2.1
16. Ireland	198	1.4
17. Japan	170	1.2
18. England	161	1.2
19. Peru	153	1.1
20. Lebanon	126	1.0
Total	11,371	83.0

Source: Education Number of the Journal of the American Medical Association, Vol. 202, No. 8, November 20, 1967.

#### Education Program for Wallace Representatives

Wallace Pharmaceuticals of Cranbury, New Jersey has created an advanced formal education program for its force of 350 professional representatives. The Masters Course, which is a three year course, is designed to bring the representative up to date on drugs, giving him a working knowledge of disease, its treatment and the therapeutic and pharmacological action of drugs used in treatment. He will also become well versed in patho-physiology. The Wallace Company feels that the representatives' value to the

physician as a channel of information is in direct proportion to their knowledge of drugs, their indications, advantages and disadvantages. Representatives taking part in the program will be required to study at least five hours a week at home. He will have to take written examinations at home on a periodic basis and will be examined annually at the Wallace headquarters. At the conclusion of the course, he will undergo written and oral examinations by a board of physicians at Cranbury. The Wallace Company representatives in Arkansas are Mr. Rudolph L. Bauer, Mr. Lucious D. Waldrip, and Mr. H. Michael Jones. The district manager is Mr. Kenneth R. Dunlap. These representatives are taking part in this program to provide a better quality of representation to the physicians in Arkansas.

#### American Physicians' Guild in Arkansas

An Arkansas Chapter of the American Physicians' Guild has been incorporated.

The Physicians' Guild is a new, national organization which is now chartered in 18 states. Membership is by invitation only.

The following "aim" is quoted from a booklet published by the Guild: "The singular aim of the American Physicians' Guild is to maintain the professional and economic independence of the physicians of the United States and thereby maintain the high quality of medical care that the American people have come to expect. This independence will be accomplished by actions which other medical organizations, all basically scientific, philosophic or informational, are not set up to perform. In practically every instance existing medical organizations are prevented by charter from acting in the way the Guild acts. The American Physicians' Guild is organized and chartered as a guild. Activities are confined to those which deal with economic and professional independence and in no way do they deal with scientific or scholastic matters. The Guild therefore does not duplicate or compete with any existing medical organization. It is the expressed intent of the American Physicians' Guild that each doctor of medicine in the United States engage in the practice of medicine on his own terms without undesired interference."

Dr. George C. Burton of El Dorado is one of the organizers of the Guild and welcomes inquiries.

# THINGS TO COME



## MEDICO-LEGAL FRONTIERS

A Medico-Legal Institute will be held at the Vanderbilt University School of Law in the Underwood Auditorium in Nashville, Tennessee, on May 3, 1968. Registration will begin at 8:15 a.m. and the program will start at 9:20 a.m. Everyone interested is cordially invited to attend. The Institute is sponsored by the Vanderbilt University School of Medicine and Vanderbilt University of Law, in cooperation with the Nashville Academy of Medicine, the Tennessee Medical Association, and the Tennessee and Nashville Bar Associations. Registration fee is \$8.00 in advance or \$10.00 at the door.



## OBITUARY

### **Dr. Horace R. Murphy**

Dr. Horace R. Murphy of Little Rock died on March 19 at the age of 47 in a Little Rock hospital. He was an orthopedic surgeon and was an associate professor of orthopedic surgery at the University of Arkansas School of Medicine. He was also a staff member of St. Vincent Infirmary, Arkansas Baptist Medical Center, Memorial Hospital and the Arkansas Children's Hospital. He was a 1946 graduate of the University of Arkansas School of Medicine and interned at the Robert B. Green Hospital in San Antonio, Texas. He served in the Army Medical Corps. Following his military service, he served his orthopedic residency in the Kennedy General Hospital in Memphis, Tennessee, and at the

Arkansas Children's Hospital in Little Rock. He began his practice in Little Rock in 1955. He was a member of the Pulaski County Medical Society, Arkansas Medical Society, American Medical Association, American Academy of Orthopedic Surgeons, Mid-Central Orthopedic Society, Diplomate of the American Board of Orthopedic Surgeons. He was also a member of the Riverdale Country Club, the Little Rock Racquet Club and attended the Pulaski Heights Methodist Church. Survivors include his widow, Mrs. Elizabeth Thompson Murphy; three sons, Vent Steven, Scott Alan, and Hale Patrick; three daughters, Tena Elizabeth, Lisbeth Anne, and Susan Jane; and his mother, Dr. Tena Murphy of Little Rock.

### **Dr. Clyde A. Lawlah**

Dr. Clyde Avery Lawlah died on March 23 at the Jefferson Hospital at the age of 64. He had practiced medicine in Pine Bluff for the past 35 years. He was a native of Bessemer, Alabama, and attended the Morehouse College in Atlanta for his pre-medical education. He graduated from the University of Chicago College of Medicine in 1931. He moved to Pine Bluff in 1933 to become the school physician at Arkansas AM&N College. He also taught at the college for several years. He received an honorary Doctor of Science degree from AM&N in May of 1967. He was a member of St. Paul Baptist Church. He was a member of Sigma Pi Phi Fraternity, the Alpha Phi Alpha Fraternity, the 20th Century Club of Pine Bluff and I.B.P.O.E. Lodge. He was also a member of the American Medical Association, the Arkansas Medical Society, the Jefferson County Medical Society, the Arkansas Medical, Dental and Pharmaceutical Association, and the Southwestern Medical and Dental Association. Survivors include his wife, Mrs. Cassa H. Lawlah; a brother, Dr. John Wesley Lawlah II of Washington; and two sisters, Mrs. Johnnie Mae Washington of Bessemer, Alabama, and Mrs. Evelyn L. Johnson of Louisville.



## PERSONAL AND NEWS ITEMS

### Dr. Sloan Installed as Fellow

Dr. James M. Sloan of Little Rock was installed as a Fellow of the American College of Obstetricians and Gynecologists at its Annual Meeting, May 6-9, in Chicago, Illinois.

### Dr. Lowrey Heads Staff

Dr. Douglas H. Lowrey of Russellville was elected President of the Medical Staff of St. Mary's Hospital in Russellville at a meeting of the Medical Staff on March 26.

### Dr. Patrick Volunteers

Dr. James K. Patrick of Fayetteville, a general practitioner and surgeon, has volunteered for a 60-day period of voluntary service in Vietnam. He departed in April and will return in June.

### Dr. Henry Files for Coroner

Dr. L. Murphey Henry of Fort Smith has filed for the position of Sebastian County coroner.

### Dr. Wilmoth Holds Open House

Dr. M. H. Wilmoth held open house on March 17th for the Doctor's Building located on 14th and Leslie Streets in Nashville, Arkansas. The public was invited to inspect the facility which presently has accommodations for three physicians.

### Doctors Guests at Meeting

Dr. Harold B. Wright and Dr. James A. Jenkins, both of Waldron, were guests at a meeting of the Board of Directors of the Scott County Hospital. The discussion included the ways and means of securing the services of another doctor for Waldron.

### Dr. Shorey and Dr. Bost Speak

Dr. Winston K. Shorey and Dr. Roger B. Bost, both of Little Rock, were guest speakers at the District Two Nurses' Association meeting in March at the St. Mary's Hospital in Russellville. They discussed the purposes of the Arkansas Regional Medical Program.

### Lewisville Gets A Doctor

Dr. William E. Jackson, formerly of Atkins, is moving to Lewisville to practice medicine. He was associated with Dr. G. E. Malone of Atkins.

### Dr. Jackson Assists With Clinic

Dr. Jabez F. Jackson of Newport is assisting with a Family Planning Program, a free tax-supported service sponsored by the State Board of Health, in Jackson County. The clinics are held twice monthly.

### Doctor Delivers Baby By Flashlight

Dr. E. J. Brown of Mansfield recently delivered a baby boy in a rural home in Logan County during a snow and ice storm and a power failure. He delivered the baby around 4:00 a.m. while the members of the family held flashlights for him to see by.

### Dr. Jerome S. Levy Elected

Dr. Jerome S. Levy was elected Governor for Arkansas of the American College of Physicians at a recent meeting in Boston, Massachusetts. He will serve for three years.

### Doctors Attend Meeting

Dr. M. H. Harris of Newport, Dr. F. M. Wilson of Jonesboro, and Dr. Frank R. Ludwig of North Little Rock were among 40 physicians attending a continuing education program sponsored by the University of Arkansas Medical Center held in March in Hot Springs. Also attending the meeting were Dr. Vernon Sammons of Hot Springs, Dr. Rhys Williams of Harrison, and Dr. Carl E. Hyman of Pine Bluff. Dr. Marlin B. Hoge of Fort Smith was re-elected president of the Arkansas Chapter of the American College of Surgeons. Dr. James French of Hot Springs was elected Secretary-treasurer. Dr. Gilbert Campbell and Dr. Joseph A. Norton, both of Little Rock, took part in the program. Also taking part in the program were Dr. Frank

M. Burton of Hot Springs, Dr. Martin Hawkins of Searcy, and Dr. James Stuckey of Little Rock.

#### **Dr. Brown Installed**

Dr. Willis E. Brown of Little Rock was installed as the president of the American College of Obstetrics and Gynecology on May 9 in Chicago at the annual meeting of the association.

#### **Doctors in AAGP**

Dr. Reuben L. Chrestman of Helena and Dr. C. Randolph Ellis of Malvern have been re-elected to active membership in the American Academy of General Practice.

#### **Dr. Norton and Dr. Bost Speak**

Dr. Joseph Norton of Little Rock and Dr. Roger Bost of Little Rock were guest speakers at a meeting of the Southeast Arkansas Medical Society on February 20 in Dumas. They discussed the background and development of the Arkansas Regional Medical Program. Also, attending the meeting were Dr. H. W. Thomas of Dermott, Dr. Wayne Lazenby of Dumas and Dr. Ed C. Gresham of Crossett.

#### **Speakers Bureau Participants**

The following doctors have recently represented the Speakers Bureau of the Arkansas Medical Society: Dr. Paul Wallick of Monticello spoke on "Skin Disorders" in Monticello on March 12 at a meeting of the Extension of Home Economists. Dr. David Gibbons of Ozark spoke on "Rabies" at a March 28 meeting of the Franklin County Extension Homemakers Council. Dr. John E. Allen, Jr. of Little Rock spoke on "Heart" at a meeting of the Business and Professional Women's Club in Malvern on April 23. Dr. A. C. Bradford of Fort Smith spoke on "Medical Facts and Fancies" at a meeting of the Fort Smith Optimist Club on April 17. Dr. L. A. Whittaker of Fort Smith spoke on "Hypnosis" at a meeting of the Van Buren Junior Chamber of Commerce on May 6.

#### **RENOVATION OF CLINIC IN MOUNTAIN HOME**

Drs. Cheney, Snow, and Wilson have renovated their home in Mountain Home.

The Clinic consists of 3,200 square feet and more than doubles the size of the facility. Their personnel staff has been increased from four to 11 persons.

In the building are located the offices of Dr. Jack Wilson, Dr. Max Cheney, Dr. Robert L. Kerr, and Dr. William R. Snow.



## **PROCEEDINGS OF SOCIETIES**

#### **The Committee for Correlation of Government Plans**

Meeting 18 February, 1968 Som Peck Hotel  
Report of Doctor Jonsen  
Subject: Experience of other states with Title 19

Since Medicaid must be in operation by January 1, 1970 it is apparent that immediate consideration must be given by the Society to this legislation. At a meeting on January 10, 1968 with representatives from The Arkansas Health Planning Program, Blue Cross-Blue Shield, Arkansas Rehabilitation Service, Arkansas State Hospital, State Department of Health, Arkansas Welfare Department, Childrens Hospital, University of Arkansas Medical Center, The Arkansas Hospital Association, Arkansas Medical Society, and The Economic Development Program, the president of our own Society, Doctor Joseph Norton, suggested that the Medical Society favored the State Health Department as an administrator and, Blue Cross-Blue Shield as the carrier for this program in the state of Arkansas. In addition he expressed a strong desire that the Medical Society should play a role in drafting this legislation.

Since Arkansas is one of the last states to initiate this program it would seem reasonable that much information could be gained from the experience of other states with their programs to date. This should include an evaluation of their experience with the designated administrator and carrier as well as financing, implementation and the types of services to be rendered by the program in Arkansas. This information is apparently available from our sister states of Oklahoma, Louisiana, Missouri and Texas, as well as many other states. It would be our hope that the Society could be active in reviewing this experience and establishing the level of medical indigency,

method of billing and formulation of the usual and customary principle.

The Society and its members should stand eager to offer assistance in every way to aid with this legislation.

Respectively submitted,  
G. Thomas Jansen, M.D.

#### **Summary of Tuberculosis Controls**

##### **State and Federal Funding**

Ben M. Saltzman, M.D.

The Arkansas State Department of Health, Division of Tuberculosis Control, is at the present time operating 62 Tuberculosis Clinics on a part-time basis over the state. It also has begun a pilot project involving the treatment of Tuberculosis in general hospitals. The Jefferson County Hospital in Pine Bluff is the site of this project.

Among the Federal Programs are the following:

Medicare—Title 18 has recently been amended to provide for treatment of patients 65 years of age and older in Tuberculosis Sanatoria on the same basis as general hospitals. It also provides for treatment in tuberculosis clinics.

Medicaid—Title 19 based on an indigency formula has not yet been implemented in Arkansas.

Federal Grants in Aid (Formula Grants) are being phased out.

Comprehensive Health Planning (PL89-749) provides federal grants for Health Planning and Public Health Services including Tuberculosis and Respiratory Disease Control Programs. Tuberculosis Programs must be built into the state plan.

Laboratories Clinical Laboratories which operate in Interstate Commerce must be regulated by licensure.

Respiratory Disease Research in the NIH will provide funds for research in infectious diseases.

Chronic Respiratory Disease Program is part of the Public Health Service.

Regional Medical Programs (PL89-239) is designed to improve patient care through research, continuing education, training and demonstration projects and to improve health manpower and facilities. This program provides planning and operating grants for medical schools, research institutions and hospitals.

Office of Economic Opportunity Program provides for skin testing of children in the Head Start Program. However, no funding is involved.

V.I.S.T.A. projects do not specify tuberculosis

control. However, case finding is part of the training curriculum.

Migrant Projects stress the importance of tuberculosis care, finding, and control.

#### **COUNCIL MINUTES**

**February 18, 1968**

**Little Rock, Arkansas**

The Council of the Arkansas Medical Society met in Little Rock at 12:00 noon, Sunday, February 18, 1968. Present were: Townsend, Norton, Kennedy, Hyatt, Duzan, J. Kolb, Kahn, Sizemore, Chudy, Bell, Long, Snodgrass, Fowler, Whittaker, Lazenby, Applegate, Thomas, Gray, Johnston, Morrison, P. Kolb, McCrary, Levy, Shuffield, Saltzman, Kemp, Henry A. Crane, Jasper MacPhail, Merlin J. Kilbury, George K. Mitchell, Winston K. Shorey, G. Thomas Jansen, A. C. Bradford, T. A. Field, Robert N. Muckleroy, John T. Herron, Roger B. Bost, Mr. Eugene Warren, Mr. Joe Elliott, Mr. A. M. Edwards and Mr. Schaefer.

The Council transacted business as follows:

- I. Chairman Townsend introduced the guests of the Council, including Dr. Robert Muckleroy of the Rehabilitation Service, Dr. T. A. Field of Fort Smith, Dr. Jasper MacPhail and Dr. Roger Bost of the Medical Center, Dr. Merlin Kilbury of Little Rock, Dr. Henry Crane of Pine Bluff, Dr. Tom Jansen of Little Rock, Mr. Joe Elliott of Blue Cross-Blue Shield and Mr. A. M. Edwards of the American Medical Association.
- II. Upon the motion of Fowler and Long, the Council elected Dr. H. W. Thomas to the Board of the Arkansas Medical Society Employees' Pension Trust.
- III. Decided to purchase a gift for Mrs. C. C. Long to commemorate her taking office as President of the Woman's Auxiliary to the American Medical Association. The chairman of the Council was directed to appoint a committee to select a gift which will be presented to Mrs. Long at the Annual Session of the Arkansas Medical Society in Hot Springs.
- IV. Dr. Townsend introduced Dr. Henry Crane of the ARKPAC Board and Dr. Crane spoke briefly asking for the assistance of the members of the Council in revitalizing ARKPAC.

- V. Upon the motion of Fowler and Saltzman, the Council elected Dr. David Gibbons of Ozark to the Tenth Councilor District Professional Relations Committee.
- VI. Dr. Saltzman presented the proposed budget for 1968. After an explanation of the salary budget by Mr. Schaefer and a discussion of the new income tax on "non-related business", upon the motion of Saltzman and Levy, the Council voted to approve the budget as presented.
- VII. Dr. Saltzman presented the report of audit of the Society and upon his motion, seconded by Kolb, the Council voted to accept and approve the report of audit.
- VIII. Dr. Shorey and Dr. Norton spoke on problems of the Medical School. In order to inform the members of the Arkansas Medical Society, upon the motion of Saltzman and Levy, it was voted to ask the Dean of the Medical School to present an annual report to the Society for its consideration at each annual session in the future, the report to be considered as a regular committee report.
- IX. Upon the motion of Saltzman and Kemp, the Council voted to continue to publish the Tuberculosis Abstracts with no increase in cost to the Tuberculosis Association.
- X. Dr. George Mitchell, Dr. C. C. Long and Mr. Joe Elliott discussed the progress of the Medicare Program under the Blue Cross-Blue Shield.
- XI. Dr. Norton stated that the Confidential Register of Professional Charges constituting a survey of usual and customary fees by each physician had not been completed and returned by enough of the doctors of the state. He urged that everyone complete his survey and return it to Blue Cross-Blue Shield. Mr. Elliott pointed out that the information would be taken from the Confidential Register and placed on IBM punch cards and that the doctor could have the register returned to him.
- XII. Dr. Muckleroy briefly described the Rehabilitation Program and asked for the cooperation of all physicians in the reporting of any incidents which did not meet with a physician's approval.
- XIII. There was considerable discussion of the importance of having a broad representation of physicians in private practice on the Board of Trustees of Blue Cross-Blue Shield. It was the consensus of the Council that steps should be taken to insure that membership on the Board did not become fixed and that the goal of the Medical Society should be the best possible representation on the Blue Cross-Blue Shield Board, and that geographical distribution of the board membership should be of secondary importance. The Council further felt that any physician serving on the board should be in active private practice. Dr. Townsend called the attention of the Council to the fact that Dr. George Mitchell, a Medical Society member of the Board of Trustees, had taken a position as full-time medical director for Blue Cross-Blue Shield and that a successor on the board should be elected. Upon the motion of Fowler and Shuffield, Dr. C. C. Long was elected to fill the unexpired term of Dr. Mitchell on the Board of Blue Cross-Blue Shield.
- XIV. Dr. Townsend called on Dr. Merlin Kilbury, Jr., who discussed the confusion in the Governor's office over an appointment to the Cancer Commission and requested that he be considered for a place on that body. Dr. Townsend assured him that the Council was gratified by his request and that he would receive consideration for the next vacancy.
- XV. Mr. Warren advised the Council that he was working on legislation to be introduced at the 1969 session of the Arkansas Legislature, which would designate the transfusion of blood as a service and not as a sale.
- XVI. Mr. A. M. Edwards of the American Medical Association and Dean Shorey discussed the functioning and the needs of American Medical Association Education and Research Foundation.
- XVII. After a discussion of the AMPAC board meeting in Washington, D. C., March 9th and 10th, upon the motion of Aplegate and Shuffield, the Council voted to request the chairman of the Council

## PROCEEDINGS OF SOCIETIES

- to appoint delegates from Arkansas to attend.
- XVIII. Chairman Townsend read a letter from Dr. Robert Watson regarding an apparent misunderstanding on the part of the Crippled Children's Division with regard to paying usual and customary fees. The letter was received for information.
- XIX. President Norton read a letter from Dr. Ed Barron, the physician for the State Prison system. The letter expressed Dr. Barron's appreciation for the Medical Society's interest in assisting with the prison system. The Council voted to have the chairman of the Council write to Dr. Payton Kolb as a member of the prison board, offering the assistance of the Society.
- XX. President Norton read a communication from the Arkansas Drug Use Control Study Commission of the Arkansas Association of Hospital Pharmacists. The letter proposed tight controls on hospital pharmacies, requiring that they be operated by licensed pharmacists. The Council voted not to sign an agreement, which was enclosed, but to ask the chairman of the Council to appoint a small committee to meet with the pharmacists and Hospital Association to see if the problem could be worked out cooperatively by the three organizations.
- XXI. Upon the motion of Saltzman and Duzan, the Council voted to send a delegation to the American Medical Association Socio-Economics Conference in Chicago, the chairman of the Council to designate the delegates.
- XXII. Upon the motion of Kolb and Bell, the Council voted to approve expenses and travel for Dr. Chudy and Dr. Price to attend a meeting in New Orleans.

The Council adjourned at 3:45 P.M.

Approved: T. E. Townsend, M.D.  
Chairman of the Council

### Committee for Correlation of Government Plans

L. A. Whittaker, M.D., Chairman

The Committee for Correlation of Government Programs had their first meeting in Little Rock on February 18. The following members were present: Dr. John Herron, Dr. Ben Saltzman,

Dr. Roger Bost, Dr. T. A. Feild, III, Dr. Thomas Jansen, Dr. Winston Shorey and Dr. Jerome Levy.

These members presented well prepared reports on federal government medical programs. These reports will be published in the Journal at monthly intervals. We are collecting a library of all medically oriented and public aid programs. This information will be available to all members of the Arkansas Medical Society.

The committee also worked out a policy statement as to the purpose and functions they are to follow.

The Committee for Correlation of Medical Legislation shall have as its function:

1. Fact finding—investigate federal and state medical legislation and its use or effect on Arkansas medicine.
2. Interpret medical legislation and make recommendations as to its use.
3. Make available, through the Arkansas Medical Journal, information and recommendations on present or proposed medical legislation.
4. Investigate the several government programs now in existence with recommendations for their use.
5. Maintain liaison with and knowledge of comprehensive medical and socio-economic plans in our state.

### Jefferson County Medical Society

The Jefferson County Medical Society recently donated \$11,426.73 to help pay for equipping an acoustical room for diagnosis of hearing defects at Jenkins Memorial Children's Center, which is under construction in Pine Bluff. The money donated was a surplus income from the society's polio-immunization drive.

### Washington County Medical Society

The Washington County Medical Society recently held a meeting in Springdale with Dr. Roger Bost of Little Rock as guest speaker. The topic was the background and development of the Arkansas Regional Medical Program. The president, Dr. Joe C. Parker of Springdale, presided over the meeting. Dr. Wade Burnside, Jr. of Fayetteville is program chairman.

### Craighead-Poinsett County Society

Dr. Roger B. Bost and Dr. Winston K. Shorey, both of Little Rock, were guest speakers at the

March meeting of the Craighead-Poinsett County Medical Society. The topic discussed was the Arkansas Regional Medical Program.



## NEW MEMBERS

DR. RICHARD E. WALTERS is a new member of the Pulaski County Medical Society. He was born in Wichita, Kansas in 1926. He attended Tulane University in New Orleans, Louisiana, and Wichita State University in Wichita, Kansas, for his pre-medical education. He then attended the University of Kansas School of Medicine for his medical education and was graduated in 1951. He then attended the Wesley Medical Center in Wichita for his internship and the University of Cincinnati for his residency training. He also served as a resident at the Arkansas State Hospital in Psychiatry. He served with the United States Navy and also with the United States Air Force. He practiced medicine for four years in Columbus, Indiana, and two years in Granite City, Illinois, before coming to practice medicine at the Arkansas State Hospital in Little Rock where he is still practicing. He is specializing in Psychiatry and resides in Little Rock with his wife, Phyllis.

Another new member of the Pulaski County Medical Society is DR. FRED T. CALDWELL. He was born in May of 1925 in Hot Springs. He attended Ouachita College in Arkadelphia, Arkansas, and Baylor University in Waco, Texas, for his pre-medical education. He then attended the Washington University in St. Louis, Missouri for his medical education. He served his internship at Barnes Hospital in St. Louis and also his residency. He served with the United States Army Reserve from 1953 to 1955 in the Medical Corps. He has held several teaching appointments and is a member of several professional societies. He is presently professor of surgery at the University of Arkansas Medical Center.

DR. LLOYD YOUNG has also been added to the membership roster of the Pulaski County Medical Society. He was born in Cleveland, Ohio, in 1926. He attended the Medical College of Virginia in Richmond, Virginia, for his medical education and served his internship at the University Hospitals in Cleveland, Ohio. He spent his residency at the University Hospital and the Cleveland Clinic in Cleveland, Ohio, and at the Langley Porter Institute in San Francisco, California. He is a member of several professional societies. He practiced medicine for seven years in Fort Pierce, Florida, as a pediatrician. He is presently professor of psychiatry and pediatrics at the University of Arkansas Medical Center in Little Rock. His specialty is child psychiatry.

Pulaski County Medical Society announces another new member, DR. STEVENSON FLANIGAN. He was born in Lebanon, Tennessee in 1926. He attended the Washington University in St. Louis, Missouri, for his pre-medical education and the Washington University School of Medicine in St. Louis, Missouri, for his medical education. He graduated in 1953 and interned at the Yale New Haven Hospital in New Haven, Connecticut. He also spent his residency there. He served two years in the United States Army and was in private practice for several years in York, Pennsylvania. He is presently professor of Neurosurgery at the University of Arkansas Medical Center in Little Rock.

DR. LARRY E. MAHON is a new member of the Pulaski County Medical Society. He is a native of Jonesboro, where he was born in 1936. He attended Arkansas State College in Jonesboro for his pre-medical education and the University of Arkansas School of Medicine for his medical education where he graduated in 1962. He interned at the Hillcrest Medical Center in Tulsa, Oklahoma. He spent his residency at the University of Arkansas Medical Center. He is presently in private practice at 601 North University in Little Rock, specializing in Orthopedic Surgery.

Jefferson County Medical Society announces DR. GEORGE V. ROBERSON, JR. as a new member. He is a native of Jonesboro where he was born in 1936. He attended Arkansas State

College in Jonesboro for his pre-medical education. He then attended the University of Tennessee College of Medicine in Memphis, Tennessee, for his medical education. He interned at the John Gaston Hospital in Memphis. He completed the first year of a general surgery residency at St. John's Hospital in Tulsa. He then returned to the John Gaston Hospital to complete his general surgery residency. He is presently practicing medicine with an office at 1421 Cherry, Pine Bluff. His specialty is general surgery.

Another new member of the Jefferson County Medical Society is DR. JOHN CRENSHAW. He was born in Memphis, Tennessee, in 1937. He attended the University of Tennessee in Martin, Tennessee, for his pre-medical education and the University of Tennessee in Memphis for his medical education where he graduated in 1961. He practiced for two years at the General L. Wood Army Hospital in Fort Leonard Wood, Missouri. He is presently practicing internal medicine with an office at 1421 Cherry, Pine Bluff, Arkansas.

DR. THOMAS W. McDANIEL, JR. is a new member of the Saline County Medical Society. He is a 1931 graduate of the University of Arkansas School of Medicine and a native of Boughton, Arkansas. He interned at the Little Rock General Hospital in Little Rock and at the U.S. Naval Hospital in Bremerton, Washington. He spent his residency at the St. Elizabeth Hospital in Washington, D.C., and had one year of post-graduate work in internal medicine at the University of Pennsylvania. He was in private practice for ten years in Fort Worth, Texas, and came to practice at the Benton State Hospital, State Hospital, Arkansas, in 1965. He is presently practicing neuro-psychiatry at the Benton State Hospital.

Conway County Medical Society announces DR. CLIFFORD L. EVANS as a new member. He is a native of Conway, Arkansas, where he was born in 1939. He attended the Hendrix College for his pre-medical education and the University of Arkansas School of Medicine, from which he received his M.D. degree in 1964. He served two years with the United States Air Force and spent his internship at the St. Frances

Hospital in Wichita, Kansas. He has been practicing medicine in Morrilton, Arkansas, since June, 1967. His office is located at 200 South Moose Street and he is a general practitioner.

A new member of Hot Spring County Medical Society is DR. LARRY B. BRASHEARS, a native of Kilgore, Texas. He was born in 1938 and attended Henderson State College for his pre-medical education. He then attended the University of Arkansas School of Medicine and graduated in 1963. He interned at the Willard Hall U.S. Air Force Hospital in San Antonio, Texas, and spent five years in military service. He has been practicing medicine in Malvern, Arkansas, since July of 1967. He has an office at 1524 Potts and is a general practitioner.

DR. JEFFERSON EARL WHITE is a new member of the Sebastian County Medical Society. He was born in Atlanta, Georgia, in 1927. He attended the Emory University School of Medicine for his medical education and graduated in 1952. He interned at Duke Hospital, Durham, North Carolina, and spent his residency at Bellevue Hospital in New York City, New York, and at Duke Hospital. He served in the United States Navy Reserve. He has held teaching appointments at the Duke University School of Medicine and at the University of Missouri School of Medicine in Columbia, Missouri. He is presently specializing in internal medicine at Holt-Krock Clinic, Fort Smith.

Another new member of the Sebastian County Medical Society is DR. ROY GENE GIRKIN. He obtained his medical education at the University of Arkansas School of Medicine where he graduated in 1964. He received his pre-medical education from the Arkansas State Teachers College and the University of Arkansas Graduate School. He interned at the University of Arkansas Medical Center and also spent his residency there and at the Baylor University Medical Center, Houston, Texas. He has an office at 922 Lexington, Fort Smith for the practice of pathology.

DR. MARY CAROLYN WILSON is a new member of the Union County Medical Society. She is a native of Pine Bluff where she was born in 1938. She attended the Mississippi State Col-

lege for Women and the Little Rock University for her pre-medical education. She attended the University of Arkansas School of Medicine and graduated in 1963. She then served her internship and residency at the Confederate Memorial Medical Center, Shreveport, Louisiana. She has an office at 460 West Oak Street, El Dorado. Dr. Wilson is a radiologist.

Union County Medical Society has also added another new member to the membership roster, DR. MARGARET ANN HARRISON. She is a native of Chicago, Illinois, where she was born in 1937. She obtained her pre-medical education at the University of Arkansas School of Medical Technology and then attended the University of Arkansas School of Medicine for her medical education. She graduated in 1963 and interned at the University of Oklahoma Medical Center in Oklahoma City. She spent her residency in pediatrics at the University of Arkansas Medical Center and her residency in hematology at the Children's Hospital, Detroit, Michigan. She has also held a teaching appointment at the University of Arkansas Medical Center. She is presently practicing general pediatrics at 514 West Faulkner in El Dorado, Arkansas.

DR. JAMES A. RUD is another new member of the Union County Medical Society. He is a native of Lewistown, Montana, where he was born in 1930. He attended the University of Nebraska College of Medicine for his medical education and graduated in 1959. He then attended the Thomas D. Dee Memorial Hospital in Ogden, Utah for his internship. He spent his residency at the Mercy Hospital in Des Moines, Iowa and at the Sioux Valley Hospital, Sioux Falls, South Dakota. He served with the United States Air Force for two years. He spent two and one-half years in general practice in Buffalo Lake, Minnesota. He is associated with Dr. Kenneth Duzan at 443 West Oak Street, El Dorado, and is practicing pathology.

Saline County Medical Society announces DR. MARVIN NORWOOD KIRK, JR., as a new member. He is a native of Muskogee, Oklahoma, where he was born in 1937. He attended

the University of Arkansas in Fayetteville for his pre-medical education and then attended the University of Arkansas School of Medicine, from which he was graduated in 1966. He interned at the Arkansas Baptist Medical Center. He has been practicing in Benton, Arkansas, since June of 1967. He has an office at 203 West Carpenter in Benton and is a general practitioner.

DR. RICHARD KENT LOVELL, SR. is another new member of the Saline County Medical Society. He is a native of Paris, Arkansas, where he was born in 1930. He attended the University of Arkansas in Fayetteville and was graduated from the University of Arkansas Medical School in 1963. He spent his internship at the Arkansas Baptist Hospital. He was a resident in general surgery at the VA Hospital in Little Rock and a resident in obstetrics-gynecology at the Fort Worth, Texas, Medical Center. He is presently in residency at the University of Arkansas Medical Center in ophthalmology. He spent four years in the U.S. Navy and practiced medicine for one and one-half years in Springdale, Arkansas.



The Women's Auxiliary of the Garland County Medical Society observed Doctors' Day by serving coffee and sweet rolls in the lounges at St. Joseph's Hospital and Ouachita Hospital. Red boutonnieres were presented to the doctors.

#### **Jefferson County**

The Women's Auxiliary to the Jefferson County Medical Society voted, at their March meeting, to hold a doctors' coffee at the Jefferson Hospital in conjunction with Doctors' Day.

**BOOK REVIEWS**

*THE BALKAN NEPHROPATHY*, Various Authors, Edited by G. E. W. Wolstenholme and Julie Knight, illustrated, pp. 123, published by Little, Brown and Company, Boston, 1967.

*COMMUNICATION IN SCIENCE: DOCUMENTATION AND AUTOMATION*, Various Authors, Edited by Anthony De Renck and Julie Knight, illustrated, pp. 274, published by Little, Brown, and Company, Boston, 1967.

*CELL DIFFERENTIATION*, Various Authors, Edited by A. V. S. De Renck, and Julie Knight, illustrated, pp. 257, published by Brown, Little, and Company, Boston, 1967.

*HEALTH OF MANKIND*, Various Authors, Edited by Gordon Wolstenholme and Maeve O'Conor, illustrated, pp. 297, published by Little, Brown, and Company, Boston, 1967.

*SURGERY OF THE AGED AND DEBILITATED PATIENT*, Various Authors, Edited by John H. Powers, M.D., W. B. Saunders Company, Philadelphia, London, and Toronto, 1968. This textbook is a collaborated effort by a group of outstanding surgeons. The book begins with a chapter on the Physiology of Aging, which is very good. This is followed by a chapter on the Pathogenesis of Diseases of Senescence; additional chapters cover such topics as Metabolic Management of Elderly Surgical Patients, the nutritional problems of the elderly, anesthesia in the older age group, etc. Of a special interest is a chapter on surgical mortality in patients of various ages. In this are discussed professional errors contributing to death such as errors in management, diagnoses, technique, etc. All in all this is a very interesting book. The information contained in it can be found in other textbooks of surgery but not collected within this particular frame of reference. This book is recommended as being worthwhile reading for the general surgeon.

*MEDICAL DEPARTMENT, UNITED STATES ARMY—PHYSICAL STANDARDS IN WORLD WAR II*. Authors, Colonel William B. Foster, MC, USA (Ret.), Ida Levin Hellman, M. Sc., Lieutenant Colonel Douglas Hesford, MSC, USA, and Captain Darrell G. McPherson, MSC, USA, Office of the Surgeon General, Department of the Army, Washington, D. C., 1967. This book on physical standards employed in World War II is of very limited interest to a practicing physician. It will be of interest to military medical personnel and to them it is highly recommended.



### **Idiopathic Thrombocytopenia in Pregnancy**

J. G. Schenker and W. Z. Polishuk (Hadassah Univ Hosp, Jerusalem)  
*Gynaecologia* 165:271-283 (No. 3) 1968

Twelve patients with idiopathic thrombocytopenic purpura with a total of 42 pregnancies have been studied. During pregnancy there were both clinical and laboratory deterioration in the thrombocytopenia in eight patients. The course of thrombocytopenia varied in different pregnancies of the same patient. Thrombocytopenia seemed to affect fertility, 33% of pregnancies being terminated by spontaneous abortion. There was no increased rate of antepartum or postpartum hemorrhage. Toxemia of pregnancy did not seem to be related to thrombocytopenia, but steroid therapy may aggravate preexisting toxemia. Vaginal delivery with minimal laceration of soft tissue is the method of choice. Idiopathic thrombocytopenia of the mother may affect the newborn. There was a 10.5% corrected fetal mortality due to thrombocytopenia. Seven newborns had a transient reduced thrombocyte count lasting some weeks. In one case persistent congenital thrombocytopenia was observed.

### **Investigation Into Use of Drugs Preceding Death From Asthma**

F. E. Speizer et al (Univ College Hosp Medical School, London)

*Brit Med J* 1:339-342 (Feb 10) 1968

Because of the striking increase in deaths attributed to asthma in England and Wales over the last seven years a follow-up enquiry into the mode of death and the method of treatment in young persons was carried out. Information was obtained from general practitioners in 177 out of 184 deaths in the age group five to 34 which were registered during a six-month period. Autopsy data was evaluated for 61% of all the deaths (91% of deaths in which a post-mortem examination was done). All but three of the subjects were known to have been suffering from asthma and signs of severe asthma (overdistended lungs with small bronchi plugged with mucus) were found in 91% of autopsies. Evidence that death was due to any other pathological condition was rare. Deaths were sudden and unexpected in 81% of the patients. Corticosteroids were used by two thirds of the patients but there was no suggestion that excess use could have been responsible for any large proportion of the deaths. Eighty-four per cent of the patients were using aerosol bronchodilators and several instances of excess use were described. Details of drug usage in the few hours immediately before death need to be evaluated further.

# T U B E R C U L O S I S



# A B S T R A C T S

Sponsored by Arkansas Tuberculosis Association

## PULMONARY FUNCTION IN SARCOIDOSIS

The most serious cases of sarcoidosis involve the respiratory system. Pulmonary function studies should, therefore, be undertaken in patients with this disease, particularly since functional changes do not always correlate with radiographic clearing.

The respiratory system is the organ most frequently involved in sarcoidosis, a granulomatous, inflammatory, systemic disease of unknown etiology. Deaths from the disease are usually secondary to diffuse pulmonary fibrosis. The fibrosis may eventually lead to fatal hypoxia and carbon dioxide retention, i.e., respiratory insufficiency.

Cor pulmonale may develop, hastening death. Factors which may lead to pulmonary hypertension and perhaps cor pulmonale include distortion and destruction of the pulmonary vascular bed by granulomatous and fibrous tissue, and polycythemia. A particularly important factor is the development of hypoxia, which causes reflex vasoconstriction of the pulmonary vasculature. Hypoxia acting alone or interacting with diminished pulmonary vascular bed and polycythemia may produce pulmonary hypertension.

Because an impaired respiratory system is the most common cause of physical disability in patients with sarcoidosis, the physician should understand the pathophysiology of pulmonary sarcoidosis and the value of pulmonary function studies in following the course and management of patients with this disease.

## PATHOLOGY

Pathologically sarcoidosis is a granulomatous disease. On microscopic examination, the granulomas are composed of large pale-staining epithelioid cells and may obtain giant cells. In contrast to tuberculosis, the granulomas in sarcoidosis have little or no peripheral cuffing with

nonspecific inflammatory cells; they do not caseate and seldom coalesce. They may resolve completely or leave a residual of hyaline or fibrous tissue.

Grossly, pulmonary sarcoidosis may show gray-yellow, firm, small nodules, fibrosis with honeycombing, emphysematous beds, and/or bronchiectasis.

The granulomas tend to form around lymphatics in peribronchial, perivasculär, and subpleural areas, but may also be in the alveolar lumen, bronchial, or vessel wall. With peribronchial and perivasculär involvement, the mucosal and endothelial surfaces are preserved.

Four distinct intrathoracic patterns can be seen radiographically. These are hilar adenopathy without pulmonary parenchymal involvement; diffuse pulmonary disease without lymph node enlargement; a combination of hilar adenopathy and diffuse parenchymal disease; and pulmonary fibrosis.

Hilar adenopathy is often considered a benign manifestation of sarcoidosis. While the majority of patients with this type of sarcoidosis show improvement or complete resolution, a number have functional abnormalities during and after resolution of the adenopathy.

Not only are decreased static lung volumes and decreased pulmonary compliance found in some patients, but the pulmonary diffusing capacity may also be decreased in patients with bilateral hilar adenopathy. Specific compliance, defined as pulmonary compliance divided by functional residual capacity, may be normal.

Decreased static lung volumes, decreased compliance with normal or abnormal specific compliance, and decreased pulmonary diffusing capacity are frequently seen also in patients with diffuse parenchymal infiltrates, with or without adenopathy. The degree of abnormality is not necessarily more severe than in patients with adenopathy alone. Roentgenographic clearing is not always accompanied by physiologic im-

Robert B. Packer, M.D. The Ohio State Medical Journal, December, 1967.

provement. The amount of functional impairment may not correlate well with the extent of radiographic change. This lack of correlation also applies to patients with hilar adenopathy without parenchymal infiltrates.

#### SEVERE FIBROSIS

Parenchymal fibrosis is the most severe manifestation of pulmonary sarcoidosis. It is in patients with this type of disease that morbidity and mortality are highest. In these patients, too, decreased static lung volumes, decreased compliance with relatively normal or abnormal specific compliance, and impaired diffusing capacity are the most common functional abnormalities. These patients have the greatest degree of functional impairment.

Functional abnormalities consistent with obstructive airway disease have been reported with all stages of pulmonary sarcoidosis, but are not common. They may represent chronic obstructive airway disease coexisting with pulmonary sarcoidosis or may reflect peribronchiolar involvement with granulomatous or fibrous tissue.

Decreased lung volumes are presumably a consequence of replacement of normal alveoli by granulomatous and fibrous tissue.

Replacement of normal lung with granulomatous and relatively inelastic fibrous tissue is probably the cause of decreased compliance and specific compliance when abnormal.

Pulmonary diffusing capacity is influenced by (1) the average thickness of the pulmonary membrane; (2) the surface area available for diffusion, (the number of functioning alveoli in contact with functioning capillaries), and (3)

the nature of the alveolar-capillary membrane. Destruction and thickening of the alveolar-capillary membranes as well as destruction of the capillary bed have been demonstrated microscopically. Both of these alterations could theoretically reduce diffusing capacity. Abnormal ventilation-perfusion relationships caused by perfusion of poorly compliant, poorly ventilated areas are also responsible for decreased diffusing capacity.

#### SPONTANEOUS CLEARING

In evaluating the effect of steroid therapy on pulmonary sarcoidosis, it should be kept in mind that 71 per cent of the patients with hilar adenopathy will have some spontaneous clearing within two years and that about 50 per cent with pulmonary infiltrates with or without adenopathy will show spontaneous improvement within one year. Striking improvement may also occur in the radiograph unaccompanied by improvement in pulmonary function.

Patients with hilar adenopathy and pulmonary infiltrates with or without adenopathy usually show an increase in static lung volumes and compliance with treatment. Those with pulmonary fibrosis appear to have fixed abnormalities. Abnormal pulmonary diffusing capacity as a rule does not improve; when it does, it seldom returns to normal. There appears to be no conclusive evidence that steroid therapy alters the long-term prognosis of sarcoidosis.

It is important to remember that patients with hilar adenopathy alone do demonstrate abnormalities of pulmonary function and that structural changes can occur in the lung without being detected by X-ray.



#### **Hyperbaric Oxygen in Treatment of Suppurated Pseudarthrosis**

M. Goulin et al (Hôpital Raymond-Poincaré, 104, Blvd Raymond-Poincaré, Garches, France)

*Press Med* 76:151-154 (Jan 24) 1968

were treated with hyperbaric oxygen (HO). The use of HO seemed to play a determining role in

Nine patients with suppurated pseudarthrosis consolidating the fracture site in five patients. HO was used in the remaining four cases only

after surgical excision of the suppurated focus. Osseous consolidation occurred in three cases. In the fourth case, osseous consolidation occurred only after decortication and external fixation; however, HO determined a rapid revascularization of devitalized fragments. HO should be used only in cases where the site of suppuration is free from necrotic tissues and sequesters, and if osseous fragments are correctly reduced and effective means of fixation are used.

**INDEX**  
**JOURNAL OF THE ARKANSAS MEDICAL SOCIETY**  
**Volume 64**  
**June, 1967—May, 1968**

**ABBREVIATIONS—**

(O) Original Articles; (SP) Special Articles; (BR) Book Review; (E) Editorial; (OB) Obituary; (R) Resolution

**— A —**

- Accidents, Rural Traffic (R) 239  
Address, President's (SP) 1  
Adjustment Problems, Health and, of Children According to Their Teachers (SP) 239  
Adrenal Cortex, The Human (BR) 346  
Agenesis, Vaginal (O) 326  
Alcoholism, The Fifth Horseman (E) 84  
Aldosterone in Cardiac and Hepatic Failure (E) 131  
Allen, John E. (O) 141, 422  
Almaden, P. J. (SP) 441  
Altitude, High, and Low Partial Pressure of Oxygen, The Effects of Certain Central Nervous System Stimulants Upon the Spontaneous Activity of Mice Exposed to (O) 208  
Amebic Disease, Acute (SP) 258  
Amenorrhea: Diagnosis and Treatment (O) 278  
American Medical Association Aids, Arkansas Medical Society and (O) 741  
Annual Meeting Program (SP) 383  
Antibiotics (E) 488  
Antibiotics, Susceptibility of Group A Beta Hemolytic Streptococci to (E) 303  
Antilymphocytic Serum (BR) 346  
Arkansas Blue Cross—Blue Shield (R) 12  
Arkansas Medical Society and American Medical Association Aids (O) 471  
Armbrust, W. Frank (O) 155  
Arrhenoblastoma of the Ovary: A Review of the Literature and Report of Two Cases (O) 359  
Assistant in Medical Practice, The Office (BR) 267  
Assistants, Medical (R) 35  
Attendance and Participation (O) 473  
Auxiliary to the Arkansas Medical Society, Minutes of the 43rd Annual Session of the Woman's (SP) 45  
Avery, M. Ronald (O) 295

**— B —**

- Bacterial Endocarditis at University of Arkansas Medical Center (O) 74  
Baird, Hubert Matson (OB) 380  
Balkan Nephropathy, The (BR) 505  
Black, Samuel P. W. (O) 248  
Blood Cells, Effects of Chloramphenicol on Mammalian (O) 181  
Blue Cross—Blue Shield (R) 12  
Blue Shield of Arkansas, Full Payment of Usual Physicians' Fees By (R) 10  
Blunt Trauma, Massive Resection of the Liver Following (O) 349  
Boles, Roger (O) 107  
Bone Marrow Transplants (O) 283  
Bone Metabolism, Thyrocalcitonin and Parathyroid Hormone (E) 337  
Bottomley, Richard H. (O) 417  
Boulden, Cecil F., Jr. (R) 373, (OB) 445  
Breast, A Classic Article on Carcinoma of the (E) 260  
Bunch, Willian L., Jr. (SP) 300  
By-Laws, Changes In Constitution and (R) 11

**— C —**

- Cancer of the Lower Lip, A One Stage Operation for Non-Advanced (O) 103  
Carcinoid Syndrome, Malignant (E) 302  
Carcinoma of the Breast, A Classic Article on (E) 260  
Carcinoma of the Vagina Following Treatment of Carcinoma of the Cervix with Radiation Therapy (O) 46  
Carcinoma, Residual, in Situ of the Cervix Following Cold Knife Conization (O) 69

- Cardiac and Hepatic Failure, Aldosterone in (E) 131  
Carotid Occlusions, Intentional and Spontaneous (O) 248  
Carter, Lucy (O) 320  
Cassey, Robert J. (O) 321  
Cataracts, Virus Induced (O) 59  
Catecholamines, Wurtman's Review of (E) 227  
Cell Differentiation (B) 505  
Cell Division in Human Testicular and Ovarian Neoplasms, Meiosis As a Means of (O) 57  
Center, William Bruce (OB) 93  
Cervix, Carcinoma of the, Carcinoma of the Vagina Following Treatment of Carcinoma of—with Radiation Therapy (O) 46  
Cervix, Residual Carcinoma in Situ of the—Following Cold Knife Conization (O) 69  
Chloramphenicol, Effects Of—on Mammalian Blood Cells (O) 181  
Christensen, William R. (O) 178  
Clark, R. B. (O) 112  
Cobb, Bryant F., III (O) 320  
Colon, Replacement of the Esophagus By Right (O) 61  
Committee for Correlation of Government Plans (SP) 498  
Committees of the Arkansas Medical Society 1967—1968 (SP) 41  
Communication in Science: Documentation and Automation (BR) 505  
Complications of Oral Contraceptives (O) 424  
Complications of Pregnancy, Common (O) 271  
Computers As Logical Manipulators of Models of Medical Problems (O) 245  
Conference, Third Annual Officers (SP) 438  
Congressman Mills (R) 238  
Conization, Residual Carcinoma in Situ of the Cervix Following Cold Knife (O) 69  
Constitution and By-Laws, Changes In (R) 11  
Continuing Education for What? (SP) 123  
Contraceptives, Oral, Complications of (O) 424  
Council Minutes (SP) 94, 237, 310, 499  
Crow, Edward W. (OB) 380  
Crystalline Lens, Composition of the Soluble Proteins from the Nucleus and Cortex of the (O) 320  
Curlin, John P. (O) 215  
Cytogenetic Studies in Human Malignant Disease (O) 417

**— D —**

- Dierschke, Donald J. (O) 321  
Donaldson, J. K. (O) 103  
Drompp, Benjamin Wayne (OB) 198, (R) 226  
Drug Responses in Man (BR) 346  
Drugs, Psychotropic, The Use of—in General Practice (O) 149  
Dues—A Stewardship Report (O) 464  
Duffy, Carl E. (O) 59  
Dulaney, Mary W. (O) 69

**— E —**

- Education for What?, Continuing (SP) 123  
Education Program, Post-Graduate Continuing (SP) 119  
Edwards, Manis C. (O) 46  
Elliott, Joe E. (O) 459  
Embolism, Massive Pulmonary (O) 251  
Endocarditis, Bacterial, at University of Arkansas Medical Center (O) 74  
Endocrinology of the Testis (BR) 200  
Enzymes in Diagnosis of Disease (O) 287  
Esophagus, Replacement of the—By Right Colon (O) 61  
Ethics, Medical (O) 461  
Eye, Anti-Inflammatory Actions of Indomethacin in the (O) 183

**— F —**

- Family Planning, Population and (O) 315  
Fees, Full Payment of Usual Physicians'—by Blue Shield of Arkansas (R) 10

# INDEX

- Ferrebee, Joseph W. (O) 283  
Fever, Rocky Mountain Spotted (SP) 300  
Flanigan, Stevenson (O) 248  
Fowler, Ross (O) 175  
Freedman, Alex S. (O) 203  
Fulmer, Gaston G. (R) 132

## — G —

- Gastric Ulcer, Malignancy in (O) 178  
German, William J. (O) 248  
Givens, James R. (O) 353  
Goldstein, Dr. Davis, Completes Fifty Years of Membership in the Fort Smith Rotary Club (SP) 232  
Good Samaritan in Arkansas (O) 323  
Graduation at Medical Center (SP) 133  
Grasse, John M., Jr. (SP) 113  
Greifenstein, F. E. (O) 112  
Group Practice By Medical School Faculty (SP) 373  
Gumbreck, L. G. (O) 322  
Gynecology, The Role of Sub-Total Hysterectomy in Modern (O) 253

## — H —

- Hanna, Calvin (O) 59, 181, 183  
Hara, Masauki (R) 436, (OB) 445  
Hardy, Clyde (SP) 373  
Harmonious Man, Medicine and the (O) 293  
Harrison, Jack W. (O) 359  
Hartwell, Ralph M. (O) 287  
Health and Adjustment Problems of Children According to Their Teachers (SP) 239  
Health of Mankind (BR) 505  
Heart Disease in a Rural Community, Knowledge of (O) 203  
Hematoma, Postpartum (O) 115  
Henry, Morris (R) 36, (O) 420  
Hepatic Failure, Aldosterone in Cardiac and (E) 131  
Herron, John T. (SP) 441  
Hiatus Hernia (Gumbreck's Bouton) in the Laboratory Rat, Hereditary Self-Healing (O) 322  
Hill-Burton Program in Arkansas (SP) 441  
Hinkle, Charles Garland (OB) 93  
House of Delegates Business Affairs (SP) 397  
Huff, J. (O) 208  
Hundley, Louis K. (R) 32  
Hutson, Sanford E. (O) 478  
Hyatt, David T. (R) 132  
Hydrocephalus, Obstetrical Management of (O) 155  
Hypertension, A Curable Case of Severe (O) 141  
Hysterectomy in Modern Gynecology, The Role of Subtotal (O) 253

## — I —

- Immune Reactions in the Kidney (E) 435  
Indigent, Professional Care for the Medically (R) 17  
Indomethacin in the Eye, Anti-Inflammatory Actions of (O) 183  
Infant Nutrition (BR) 172  
Insurance Companies Underwriting Automobile Collision and Liability Insurance (R) 12  
Insurance for the Doctor (BR) 268  
Insurance Program, AMA Disability (R) 12

## — J —

- Jansen, G. Thomas (SP) 498  
Jarman, Ruth (O) 59  
Jennings, Ralph H. (O) 253  
Johnson, David M. (O) 74  
Johnson, Joseph C., Jr. (O) 326  
Juniper, Kerrison, Jr. (SP) 258

## — K —

- Kahn, Alfred, Jr. (E) 52, 131, 190, 227, 260, 302, 303, 337, 372, 435, 488  
Keatts, James G. (O) 59  
Kidney, Immune Reactions in the (E) 435

- Kinesthetic and Vestibular Mechanisms, Myotatic, (BR) 346  
Koenig, A. S. (O) 461  
Koenig, Virgil L. (O) 320

## — L —

- Ladies, The (O) 469  
Lawlah, Clyde A. (OB) 496  
Lazenby, A. W. (SP) 446  
Leadership, The Price of (O) 457  
Legislature, Medicine and the Arkansas (O) 420  
Levy, Jerome S. (E) 162  
Life Membership (R) 17  
Liver, Massive Resection of the—Following Blunt Trauma (O) 349  
Long, C. C. (O) 471  
Long, John M. (O) 245  
Long, Mrs., Named President Elect of AMA Auxiliary (SP) 199, (O) 469  
Lower Lip, A One Stage Operation for Non-Advanced Cancer of the, (O) 103  
Lung, Development of the (BR) 200

## — M —

- Mahoney, Paul L. (R) 226  
Malignancy in Gastric Ulcer (O) 178  
Malignant Carcinoid Syndrome (E) 302  
Malignant Disease, Cytogenetic Studies in Human (O) 417  
Marriage Counseling as a Responsibility of the Physician (O) 211  
Mason, William L. (O) 326  
Massive Resection of the Liver Following Blunt Trauma (O) 349  
McCracken, John D. (O) 141, (O) 422  
McCrary, Robert (O) 473  
McElin, Thomas W. (O) 278  
McMahon, H. Scott (O) 61  
McMains, William D. (O) 321  
Medical Assistants (O) 475  
Medical Department, United States Army—Neuro-Psychiatry in World War II (BR) 346  
Medical Department, United States Army—Physical Standards in World War II (BR) 505  
Medical Ethics (O) 461  
Medicare Brought Up to Date (O) 466  
Medicare Contract With Society To Be Terminated (SP) 197  
Medicare in Arkansas (O) 459  
Medicine and the Arkansas Legislature (O) 420  
Medicine and the Harmonious Man (O) 293  
Meiosis As A Means of Cell Division in Human Testicular and Ovarian Neoplasms (O) 57  
Melton, C. E., Jr. (O) 319  
Members Joining After July 1 (R) 16  
Mesenteric Venous Occlusion (O) 143  
Miller, George E. (SP) 123  
Minutes of the 43rd Annual Session of the Woman's Auxiliary to the Arkansas Medical Society (SP) 45  
Morris, Woodbridge E. (O) 422  
Murphree, Oddist D. (O) 59  
Murphy, Garland D., Jr. (R) 83  
Murphy, Horace R. (R) 487, (OB) 496  
Muscle Electrical Activity, An Interpretation of Smooth (O) 319  
Myotatic, Kinesthetic and Vestibular Mechanisms (BR) 346

## — N —

- Neck, The Mass in the (O) 107  
Neoplasms, Meiosis As A Means of Cell Division in Human Testicular and Ovarian (O) 57  
Nettles, John B. (O) 478  
Nettleship, Anderson (O) 57  
Neufeld, Orville (O) 181  
Norris, Elvin L. (O) 478  
Norton, Joseph A. (SP) 65, (O) 457  
Nutrition, Infant (BR) 172

# INDEX

## — O —

- Obstetrical Management of Hydrocephalus (O) 155  
Occlusion, Mesenteric Veins (O) 143  
Occlusions, Carotid, Intentional and Spontaneous (O) 248  
Officers of the Arkansas Medical Society 1967-1968 (SP)  
    37  
Officers of the County Medical Societies, 1967 (SP) 38  
Olmstead, C. (O) 208  
Organized Medicine, Physician Participation in (E) 372  
Osteoporosis (E) 52  
Ovary, Arrhenoblastoma of the—: A Review of the Literature and Report of Two Cases (O) 359  
Ovulation, Toward the Detection of—A Preliminary Report (O) 321  
Oxygen, The Effects of Certain Central Nervous System Stimulants Upon the Spontaneous Activity of Mice Exposed to High Altitude and Low Pressure of (O) 208

## — P —

- Parathyroid Hormone, Bone Metabolism, Thyrocalcitonin, and (E) 337  
Participation, Attendance and (O) 473  
Patient, The—The Physician—The Clergy—The Challenge (E) 162  
Pathologic Physiology—Mechanisms of Disease (BR) 139  
Pathology (BR) 172  
Patterson, Sam P. (O) 271, 315  
Pentobarbital, Age-related Tissue Responses to Incubation with (O) 321  
Perkins, William Hale (OB) 444  
Physical Therapy Program in Arkansas, The (SP) 434  
Physician Participation in Organized Medicine (E) 372  
Pioneer Doctors Fowler, The (O) 175  
Pituitary-Adrenal Function, Tests of (O) 353  
Population and Family Planning (O) 315  
Post-Graduate Continuing Education Program (SP) 119  
Postpartum Hematoma (O) 115  
Practice, Group, By Medical School Faculty (SP) 373  
Pregnancy, Chronic Tubal (O) 295  
Pregnancy, Common Complications of (O) 271  
Pregnancy in the Adolescent Female (O) 215  
Pregnancy Tests, Evaluation of the Newer (O) 478  
Preoperative and Postoperative Care by the Committee on Pre and Postoperative Care, Manual of (BR) 241  
Proceedings of the 91st Annual Session of the Arkansas Medical Society (SP) 1  
Professional Care for the Medically Indigent (R) 17  
Proteins, Soluble, Composition of the—From the Nucleus and Cortex of the Crystalline Lens (O) 320  
Psychotropic Drugs in General Practice, The Use of (O) 149  
Public Health at a Glance (SP) 50, 80, 130, 161, 187, 225, 258, 300, 335, 368, 434, 486  
Pulmonary Embolism, Massive (O) 251

## — R —

- Radiation Therapy, Carcinoma of the Vagina Following Treatment of Carcinoma of Cervix with (O) 46  
Radiological Health in Arkansas (SP) 370  
Reese, Elizabeth Bahn (SP) 239  
Reibe, Mrs. Francis (O) 475  
Resolution of Appreciation (R) 35  
Resolution of Appreciation: News Media (R) 35  
Resolution No. 1 (R) 34  
Resolution No. 2 (R) 34  
Rivarola, Carlos H. (O) 61  
Roberson, George (O) 143  
Robins, R. B. (O) 251  
Rockefeller, Winthrop (O) 293  
Rocky Mountain Spotted Fever (SP) 300  
Roentgenologic Diagnosis (BR) 267  
Romine, James C. (O) 115  
Rosendale, Albert F. (E) 84  
Rural Traffic Accidents (R) 239

## — S —

- "Saddle Block" (O) 112  
Saldivar, J. T., Jr. (O) 319  
Saltzman, Ben N. (O) 464, (SP) 499  
Scott, Jett O. (OB) 307  
Shaw, Robert W. (O) 321  
Shock—A Newer Approach (E) 190  
Shuffield, Elvin (R) 36  
Sinclair, Richard J. (O) 321  
Smith, Robert J. (O) 349  
Smith, Vernon S. (O) 322  
Smith, William Howard (OB) 95  
Snodgrass, Phillip A. (SP) 447  
Spillyards, J. S., Jr. (OB) 231  
Stanley, Allan J. (O) 322  
Statement of Ownership, Management, and Circulation (SP) 210  
Stephens, Stacy R. (O) 424  
Stevenson, Jesse E. (R) 83  
Stone, J. E. (O) 208  
Streptococci, Susceptibility of Group A Beta Hemolytic—to Antibiotics (E) 303  
Subclavian Steal Syndrome (O) 422  
Summary of Tuberculosis Controls, State and Federal Funding (SP) 499  
Surgery of the Aged and Debilitated Patient (BR) 505  
Swindoll, Bryant S. (SP) 434  
Syndrome, Malignant Carcinoid (E) 302  
Syndrome, Subclavian Steal (O) 422

## — T —

- Testis, Endocrinology of the (BR) 200  
Textbook of Medicine (BR) 139  
Thiamine Deficiency (BR) 200  
Third, Annual Officers Conference (SP) 438  
Thompson, W. Ragon (O) 69  
Thyrocalcitonin, and Parathyroid Hormone, Bone Metabolism (E) 337  
Tissue, Age-Related, Responses to Incubation with Pentobarbital (O) 321  
Transplants, Bone Marrow (O) 283  
Tubal Pregnancy, Chronic (O) 295  
Tuberculosis Abstracts (SP) 55, 173, 201, 242, 269, 313, 317, 381, 455, 506

## — U —

- Ulcer, Gastric, Malignancy in (O) 178

## — V —

- Vagina, Carcinoma of the, Following Treatment of Carcinoma of Cervix with Radiation Therapy (O) 46  
Vaginal Agenesis (O) 326  
Vestibular Mechanisms, Myostatic, Kinesthetic and (BR) 346  
Veterans Administration, Letter from (SP) 411  
Viet Nam (SP) 447  
Vinh Binh, Report of a Short Tour in (SP) 113  
Virus Induced Cataracts (O) 59  
Vision Screening, Preschool (SP) 486

## — W —

- Waggoner, Raymond W. (O) 149, 210  
Wall, J. M. (OB) 231  
Weiss, A. Kurt (O) 321  
What AMS Does for You (Where Your Dues Go) (SP) 65  
White, Daphney Earl (OB) 307, (R) 336  
Whittaker, L. A. (SP) 1, (O) 466  
Wilson, Charles Stewart (OB) 380  
Wilson, Frank (SP) 370  
Wilson, Mike (O) 323  
Wurtman's Review of Catecholamines (E) 227



THE LIBRARY  
UNIVERSITY OF CALIFORNIA  
San Francisco Medical Center

THIS BOOK IS DUE ON THE LAST DATE STAMPED BELOW

7 DAY LOAN

7 DAY  
JAN 30 1969  
RETURNED  
MAR 7 1969

25m-10,'67(H5524s4)4315

St

229474

